HYDROLOGY STUDY FOR
CCLAY, INC.

SKELTON CREEK OPERATION

P-3934 R-1

JEFFERSON COUNTY, ALABAMA

BY

PERC ENGINEERING CO., INC.

P.O. BOX 1712

JASPER, ALABAMA 35502

100 YEAR FLOOD STUDY SKELTON CREEK

ATTACHMENT III-B-2(a)

NOVEMBER 7, 2012

PERC
ENGINEERING CO., INC.

Telephone: (205) 384-5553
Facsimile: (205) 295-3114 - Main Building
(205) 295-3115 - Water Lab
Web Address: www.percengineering.com

November 7, 2012

Mr. Gary Heaton, P.E.
Alabama Surface Mining Commission
Post Office Box 2390
Jasper, Alabama 35502-2390

RE: CClay, Inc.
Skelton Creek Operation
P-3934 R-1

Dear Gary:

I hereby certify the attached Skelton Creek Flood Study for the above referenced mine is in accordance with the Regulations of the Alabama Surface Mining Commission as adopted by Act 81-435 of December 18, 1981 and amended to date, and is true and correct to the best of my knowledge and belief.

If you have any questions or required additional information, please feel free to call.

Sincerely,
PERC Engineering Co., Inc.

W. P. Griffin, Jr.

W. P. Griffin, Jr., P.E.
AL. REG. NO. 14243

ALABAMA REGISTERED No. 14243 PROFESSIONAL ENGINEER W. P. GRIFFIN, JR.

100 YEAR FLOOD STUDY SKELTON CREEK

The Skelton Creek Operation of CClay, Inc., is located south of Praco in Jefferson County, Alabama. The original operation plan, for the Skelton Creek Operation of CClay, Inc., called for constructing berms along the west side of Skelton Creek. These berms would be used to route runoff from the operation into sediment basins. The berms constructed will eliminate part of the existing flood plane along Skelton Creek. Revision R-1 calls for constructing a berm on the east side of Skelton Creek and constructing a road across Skelton Creek.

ASMC has requested that a revised flood study be performed to see what effect the proposed berms and road crossing would have on the 100 year flood elevations. National Flood Insurance Program FIRM maps where obtained and overlain on the USGS quadrangle maps. Two panel maps 01073C0325G and 01073C0330G were used. The flood elevation interpolated using the quad sheets and the FIRM maps is elevation 280. The drainage area at the downstream portion of the Skelton Creek Operation is 4.46 square miles. The peak 100 year flow for Skelton Creek was estimated using the regression equation from page 7 of "Magnitude and Frequency of Floods in Alabama: U.S.G.S. Geological Survey Water-Resources Investigations Report 95-4199" by J. B. Atkins, 1996. The equation is as follows:

$$Q_{100} = 855(A)^{0.667}$$

Where Q_{100} = peak flow in cubic feet per second

A = drainage area in square miles.

The 100 year flood for Skelton Creek only, at the downstream edge of the operation area was calculated using this equation obtaining a peak flow of 2318 cfs. This flow was used throughout the study area to be conservative.

The program HEC-2 version 4.6.2 May 1991, developed by the Army Corps of Engineers was used to model the 100 year flood using these sections. The 100 year flood was modeled using pre-construction existing conditions without the proposed berms. Then a second run was made using the

post construction conditions with the proposed berms in place.

Cross sections of the main channel were taken from a combination of field surveys and 2 foot mapping obtained from Jefferson County. Some of the cross sections were interpolated from the field surveys. The proposed top of berm elevation is 266.0 on the west side of Skelton Creek. There will be one short section on the west side of Skelton Creek with a proposed top of berm elevation of 268.0. The proposed top of berm elevation is 266.4 on the east side of Skelton Creek. The calculations for Section No. 3 used a top of berm elevation of 266.0. The calculations for all of the other berms used a top of berm elevation of 270.0. The berms were considered to be continuous from the south end to the north end to simplify calculations and to obtain a conservative flood elevation. For the purposes of calculations it was assumed that the area inside the proposed berms was not available for storage.

The proposed road crossing for Skelton Creek has four 84 inch diameter corrugated metal pipes. There will be proposed safety berms with an elevation of 267.7. To be conservative for the study the safety berms are considered to extend from bank to bank of Skelton Creek.

Using only the drainage area for the study area of Skelton Creek, the critical depth and the normal depth was calculated for Section No. 1. The normal depth is more than the critical depth showing the flow to be subcritical. The normal water surface elevation of 267.3 was used to start calculations at Section No. 1 and proceed upstream to Section No. 11. The pre-construction water surface elevation of 267.88 was calculated for Section No. 11. The post construction water surface elevation of 268.89 was calculated for Section No. 11. This shows that the proposed berm and road construction along Skelton Creek would only raise the Skelton Creek 100 year flood elevation 1.01 feet. This is not a significant change since this is below the FIRM 100 year flood elevation and, in my opinion, there will be no adverse impacts upstream.

An alternate method to obtain the flood elevation along Skelton Creek is to use the FIRM 100 year flood maps. This shows the 100 year flood elevation at the south most end of CClay, Inc.'s Skelton Creek Operation to be elevation 280. The normal water surface elevation of 280.0 was used to start

calculations at Section No. 1 and proceed upstream to Section No. 11. The pre-construction water surface elevation of 280.01 was calculated for Section No. 11. The post construction water surface elevation of 280.02 was calculated for Section No. 11. This shows that the proposed berm and road construction along Skelton Creek would not raise the FIRM 100 year flood elevation.

Both of these methods are shown in the FEMA publication FEMA 265 "Managing Floodplain Development in Approximate Zone A Areas" a guide for obtaining and developing base (100-year) flood elevations.

CCLAY, INC.
SKELTON CREEK OPERATION P-3934 R-1
SKELTON CREEK HEC-2 FLOOD STUDY

		PRE-CONSTRUCTION					POST CONSTRUCTION				NET DIFFERENCE			
SECTION	Q TOTAL CFS	EL. MIN. FT.	W.S. EL. FT.	VCH F/S	AREA SF.	TOPWID FT.	W.S. EL. FT.	VCH F/S	AREA SF.	TOPWID FT.	W.S. EL. FT.	VCH F/S	AREA SF.	TOPWID FT.
1	2318	254.50	267.30	2.48	2098.75	522.32	267.30	2.48	2098.75	522.32	0.00	0.00	0.00	0.00
1	2318	254.50	280.00	0.52	9168.86	587.71	280.00	0.52	9168.86	587.71	0.00	0.00	0.00	0.00
2	2318	254.24	267.32	2.15	2389.10	515.20	267.32	2.15	2389.10	515.20	0.00	0.00	0.00	0.00
2	2318	254.24	280.00	0.51	9406.67	584.37	280.00	0.51	9406.67	584.37	0.00	0.00	0.00	0.00
3	2318	254.00	267.34	1.79	2788.20	509.02	267.31	2.21	1461.84	506.45	-0.03	0.42	-1326.36	-2.57
3	2318	254.00	280.00	0.48	9747.58	581.11	280.00	0.46	8429.65	581.11	0.00	-0.02	-1317.93	0.00
4	2318	251.97	267.38	1.47	3399.21	511.55	267.37	2.63	950.01	129.69	-0.01	1.16	-2449.20	-381.86
4	2318	251.97	280.00	0.42	11013.37	683.31	280.00	0.57	7544.83	683.30	0.00	0.15	-3468.54	-0.01
5	2318	253.11	267.40	1.59	3337.67	602.69	267.48	2.13	1105.64	159.24	0.08	0.54	-2232.03	-443.45
5	2318	253.11	280.00	0.41	11384.56	669.97	280.00	0.49	7981.91	669.97	0.00	0.08	-3402.65	0.00
6	2318	253.31	267.43	1.42	3618.63	734.32	267.62	1.46	1588.13	249.47	0.19	0.04	-2030.50	-484.85
6	2318	253.31	280.00	0.35	13407.08	818.44	280.00	0.35	10083.03	818.45	0.00	0.00	-3324.05	0.01
7	2318	254.84	267.45	1.98	2531.83	583.22	267.66	2.00	1156.45	184.83	0.21	0.02	-1375.38	-398.39
7	2318	254.84	280.00	0.45	10501.46	679.48	280.00	0.46	8058.90	679.48	0.00	0.01	-2442.56	0.00
8	2318	255.63	267.54	2.46	2120.73	498.76	267.82	2.05	1133.47	219.98	0.28	-0.41	-987.26	-278.78
8	2318	255.63	280.00	0.53	8892.56	579.21	280.01	0.44	7166.74	579.22	0.01	-0.09	-1725.82	0.01
8.1	2318	255.82	267.59	1.68	3019.33	515.31	267.90	1.84	2568.47	518.74	0.31	0.16	-450.86	3.43
8.1	2318	255.82	280.01	0.48	9953.19	592.84	280.01	0.53	9341.29	592.85	0.00	0.05	-611.90	0.01
8.2	2318	256.07	267.59	1.98	2544.07	484.37	268.75	1.68	3150.66	486.44	1.16	-0.30	606.59	2.07
8.2	2318	256.07	280.01	0.52	9172.17	570.86	280.01	0.55	9204.09	570.90	0.00	0.03	31.92	0.04
9	2318	256.92	267.61	3.21	1699.87	555.40	268.79	1.33	2349.13	566.50	1.18	-1.88	649.26	11.10
9	2318	256.92	280.01	0.53	9080.15	619.26	280.01	0.27	9043.91	619.28	0.00	-0.26	-36.24	0.02
10	2318	258.05	267.87	3.67	1723.23	562.49	268.88	2.62	2300.04	573.78	1.01	-1.05	576.81	11.29
10	2318	258.05	280.01	0.53	9044.15	626.70	280.02	0.53	9005.71	626.72	0.01	0.00	-38.44	0.02
11	2318	258.13	267.88	4.20	1527.54	545.32	268.89	2.93	2082.49	557.25	1.01	-1.27	554.95	11.93
11	2318	258.13	280.01	0.55	8684.19	622.42	280.02	0.55	8649.64	622.45	0.01	0.00	-34.55	0.03

CCLAY, INC.

SKELTON CREEK OPERATION

P-3934 R-1

SKELTON CREEK FLOOD STUDY

PRE-CONSTRUCTION

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES           *
 *                                         *
 *  Version   4.6.2;  May 1991             *
 *                                         *
 *  RUN DATE    24OCT12    TIME   20:29:32 *
 *****************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

```
X     X  XXXXXXX  XXXXX            XXXXX
X     X  X       X    X           X    X
X     X  X       X                     X
XXXXXXX  XXXX    X         XXXXX   XXXXX
X     X  X       X                X
X     X  X       X    X           X
X     X  XXXXXXX  XXXXX           XXXXXXX
```

THIS RUN EXECUTED 24OCT12 20:29:32

```
************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1    CCLAY, INC.
T2    SKELTON CREEK OPERATION P-3934 R-1
T3      SKELTON CREEK
T4    PRE-CONSTRUCTION FLOOD STUDY FOR SKELTON CREEK
T5    First Profile, Q = 2318 cfs based on normal flow depth at Section No. 1
T6    the water surface elevation  = 267.3 ft.
T7    Second Profile Q = 2318 cfs based on FEMA flood elevation at Section No. 1
T8    the water surface elevation = 280.0 ft.


      Zero values indicate subcritical profile starting with known elevation.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                   0         0                                   267.3

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

                                                                  -1


      Manning's "n" = .08 overbanks & .04 channel
      Contraction coef. 0.1 and Expansion coef. 0.3

NC      .08       .08       .04        .1        .3


QT        2      2318      2318


X1        1        51    549.05    602.39
GR      300         0       298      4.69       296      9.44       294     14.09       292     18.46
GR      290     22.96       288     27.79       286     32.16       284     37.23       282     42.18
GR      280     47.60       278     52.94       276     58.35       274     64.62       272     71.41
GR      270     79.76       268     89.07       266    102.40       264    208.39    262.42    445.18
GR   263.21    445.18    263.62    462.50    264.76    495.51    265.08    527.52    262.30    549.05
GR   257.19    560.14    256.02    566.87    254.52    570.14    254.50    576.75       256    580.34
GR   256.88    587.97    260.87    596.45    262.30    602.39    265.59    616.06    269.99    616.06
GR      270    616.09       272    620.60       274    624.41       276    628.23       278    631.84
GR      280    635.31       282    639.23       284    643.21       286    646.56       288    650.05
GR      290    653.63       292    657.62       294    660.62       296    664.23       298    667.92
GR      300    671.66
```

X1	2	54	544.81	598.15	15	19	24			
GR	300	0.00	298	5.44	296	10.78	294	15.83	292	20.98
GR	290	25.81	288	30.20	286	35.15	284	40.33	282	45.42
GR	280	50.92	278	56.38	276	61.20	274	68.27	272	74.36
GR	270	81.94	268	91.55	266	106.31	264	185.96	262	294.80
GR	262	393.21	262	440.94	262.79	440.94	263.21	458.25	264.34	491.26
GR	264.66	523.28	261.89	544.81	256.77	555.90	255.60	562.62	254.26	565.90
GR	254.24	572.50	255.58	576.10	256.47	583.73	260.46	592.20	261.89	598.15
GR	265.18	611.82	267.70	611.82	268	612.53	270	615.85	272	620.37
GR	274	624.20	276	628.08	278	631.92	280	635.29	282	639.28
GR	284	643.23	286	646.25	288	650.02	290	653.99	292	657.53
GR	294	660.89	296	664.49	298	668.17	300	671.93		

X1	3	56	526.91	580.25	26	26	22			
GR	300	0.00	298	5.36	296	11.28	294	16.65	292	22.06
GR	290	27.56	288	32.54	286	38.05	284	43.34	282	48.57
GR	280	54.15	278	59.72	276	64.91	274	71.81	272	77.62
GR	270	85.50	268	95.38	266	112.20	264	174.20	262	219.26
GR	260	358.84	260	383.10	261.27	423.04	262.06	423.04	262.48	440.35
GR	263.62	473.36	263.93	505.38	261.16	526.91	256.04	538.00	254.87	544.72
GR	254.02	548.00	254.00	554.60	254.85	558.20	255.74	565.83	259.73	574.30
GR	261.16	580.25	264.45	593.92	264.45	602.47	266	606.62	268	611.69
GR	270	615.62	272	620.16	274	624.00	276	627.93	278	631.99
GR	280	635.26	282	639.34	284	643.25	286	646.53	288	649.99
GR	290	654.34	292	657.44	294	661.15	296	664.74	298	668.41
GR	300	672.19								

X1	4	56	653.02	692.58	436	196	255			
GR	300	0	298	6.12	296	12.70	294	18.54	292	24.98
GR	290	30.58	288	36.02	286	42.07	284	47.25	282	53.13
GR	280	59.73	278	67.31	276	78.01	274	117.64	272	163.00
GR	270	181.80	268	196.74	266	215.52	264	245.70	262	268.46
GR	260	302.16	260	511.07	260.63	511.07	260.89	541.33	261.26	555.04
GR	261.26	573.22	261.64	601.75	262.21	636.99	261.01	653.02	251.97	655.07
GR	253.19	672.38	254.71	677.25	257.17	680.22	257.48	686.34	260.44	692.58
GR	261.56	703.20	261.84	709.34	264.72	712.98	266.97	712.98	268	715.81
GR	270	721.15	272	726.36	274	731.51	276	735.02	278	739.59
GR	280	743.03	282	746.05	284	749.92	286	752.85	288	755.53
GR	290	758.04	292	760.89	294	763.71	296	766.55	298	769.18
GR	300	771.68								

X1	5	52	675.59	721.49	257	251	253			
GR	300	0.00	298	10.15	296	19.03	294	27.12	292	35.24
GR	290	43.34	288	49.27	286	56.63	284	64.17	282	70.54
GR	280	77.46	278	85.15	276	91.90	274	99.29	272	107.12
GR	270	114.54	268	124.59	266	136.93	264	164.50	262	248.99
GR	262	403.33	262	436.92	262	528.41	262	597.62	261.61	675.59
GR	254.38	678.32	253.11	686.97	254.73	707.23	256.34	709.36	257.13	709.81
GR	258.87	718.97	261.28	721.49	263.60	721.49	264	723.06	266	728.00
GR	268	732.18	270	735.22	272	738.48	274	740.41	276	742.85
GR	278	745.22	280	747.42	282	749.19	284	750.99	286	752.76
GR	288	754.52	290	756.23	292	757.20	294	759.17	296	760.58
GR	298	762.32	300	763.91						

X1	6	51	642.36	719.61	292	535	516			
GR	300	0.00	298	20.56	296	33.10	294	43.74	292	51.92
GR	290	59.14	288	64.94	286	72.19	284	77.94	282	83.65
GR	280	89.98	278	95.89	276	102.93	274	110.03	272	117.26
GR	270	125.47	268	135.66	266	146.11	264	158.64	262	179.13
GR	262	268.17	264	428.61	264.00	582.06	262.51	612.72	262.51	642.36
GR	257.63	659.90	257.00	668.47	253.31	677.50	254.09	697.09	255.67	717.64
GR	260.91	719.61	262.22	719.61	264	856.02	266	867.75	268	874.96
GR	270	880.84	272	886.11	274	891.74	276	896.71	278	902.48
GR	280	908.40	282	916.02	284	927.70	286	960.58	288	997.56
GR	290	1006.38	292	1012.47	294	1018.37	296	1022.98	298	1028.14
GR	300	1032.96								

X1	7	59	248.23	314.08	324	156	328			
GR	300	0	298	3.16	296	6.07	294	8.74	292	11.92
GR	290	15.06	288	18.23	286	21.21	284	24.48	282	27.50
GR	280	30.68	278	33.82	276	37.02	274	39.84	272	43.60
GR	270	47.74	268	52.45	266	58.34	264	68.51	264	102.02
GR	264	167.79	263.27	167.79	263.38	182.14	263.43	213.66	262.27	248.23
GR	258.07	252.89	258.40	256.61	259.40	263.32	259.42	270.42	256.64	277.63
GR	254.84	286.85	254.85	291.38	255.82	305.76	263.22	314.08	263.52	322.93
GR	262.90	345.74	262.89	381.09	263.29	404.14	264	404.14	264	556.51
GR	264	612.13	266	628.89	268	640.46	270	653.12	272	666.59
GR	274	680.16	276	691.36	278	699.90	280	710.13	282	720.18
GR	284	730.19	286	740.08	288	748.03	290	755.48	292	761.47
GR	294	767.27	296	772.14	298	777.51	300	782.38		

X1	8	53	126.73	174.62	476	612	552			
GR	300	0	298	2.60	296	5.78	294	9.00	292	12.56
GR	290	16.25	288	18.90	286	22.22	284	25.68	282	29.28
GR	280	33.07	278	37.27	276	41.32	274	45.60	273.26	47.50
GR	272.41	47.50	264.11	66.31	263.66	103.20	263.18	126.73	260.65	135.81
GR	259.13	138.54	257.16	148.13	255.63	157.23	255.80	160.79	257.24	169.37
GR	263.53	174.62	263.58	197.08	259.88	207.31	260.41	212.31	263.43	222.06
GR	262.85	266.93	263.11	266.93	264	331.32	264	476.56	264	519.60
GR	266	545.22	268	560.84	270	573.75	272	584.21	274	592.04
GR	276	599.16	278	605.91	280	612.26	282	618.44	284	625.17
GR	286	630.82	288	636.15	290	641.78	292	646.40	294	651.22
GR	296	655.71	298	660.69	300	665.78				

X1	8.1	57	178.23	226.11	22	89	68			
GR	300	0.0	298	3.71	296	7.50	294	11.09	292	15.18
GR	290	19.34	288	22.19	286	25.89	284	29.69	282	33.65
GR	280	37.79	278	42.33	276	46.68	274	51.11	272	56.72
GR	270	61.42	268	68.01	266	75.48	264	86.63	263.45	102.45
GR	260.06	117.81	259.83	154.70	259.59	178.23	258.33	187.30	257.57	190.04
GR	256.59	199.63	255.82	208.72	255.90	212.28	256.62	220.87	259.77	226.11
GR	259.79	248.58	257.94	258.81	258.21	263.80	259.72	273.56	262	305.04
GR	262	310.36	261.61	346.49	262	361.35	264	551.53	266	573.42
GR	268	587.84	270	598.23	272	606.08	274	612.50	276	618.65
GR	278	625.04	280	630.61	282	636.06	284	641.51	286	646.16
GR	288	650.50	290	654.59	292	657.63	294	661.87	296	665.71
GR	298	669.72	300	672.93						

X1	8.2	53	154.39	202.28	96	86	91			
GR	300	0.0	298	2.86	296	5.33	294	8.89	292	11.44
GR	290	14.12	288	16.85	286	20.09	284	23.73	282	27.24
GR	280	30.78	278	34.71	276	39.08	274	44.07	272	48.90
GR	270	54.76	268	62.27	266	71.49	264.46	75.17	260.31	93.98
GR	260.09	130.86	259.85	154.39	258.58	163.47	257.82	166.20	256.84	175.80
GR	256.07	184.89	256.16	188.45	256.88	197.03	260.02	202.28	260.05	224.74
GR	258.20	234.98	258.46	239.97	259.97	249.72	264	260.73	264	399.60
GR	262.45	439.33	264	504.52	266	534.63	268	552.00	270	564.92
GR	272	574.27	274	581.94	276	588.98	278	595.26	280	601.61
GR	282	607.72	284	613.16	286	618.22	288	622.82	290	626.55
GR	296	639.04	298	643.01	300	646.71				

X1	9	44	100.15	148.04	284	265	293

GR	300	0.00	298	2.56	296	5.75	294	8.48	292	11.44
GR	290	14.08	288	17.00	286	20.09	285.46	20.92	273.67	20.92
GR	265.37	39.74	264.92	76.62	264.44	100.15	261.91	109.23	260.39	111.96
GR	258.42	121.56	256.92	130.65	257.06	134.21	258.50	142.79	264.79	148.04
GR	264.84	170.50	261.14	180.74	261.67	185.73	264.69	195.48	264.11	240.35
GR	264.38	240.35	266	573.23	268	593.95	270	605.68	272	615.93
GR	274	623.38	276	629.39	278	634.98	280	640.17	282	644.81
GR	284	649.26	286	653.47	288	658.35	290	661.95	292	666.01
GR	294	670.20	296	674.13	298	677.99	300	681.50		

X1	10	50	431.90	448.70	352	251	412

GR	300	0.00	298	3.49	296	6.48	294	9.87	292	13.11
GR	290	15.86	288	18.30	286	21.99	284	24.85	282.73	27.01
GR	273.27	27.01	265.85	37.65	265.74	67.70	265.72	100.51	259.64	112.28
GR	261.56	116.49	260.85	116.74	264.96	128.79	265.18	215.51	264.88	286.21
GR	264.62	328.15	264.72	384.28	263.67	431.90	258.60	436.00	258.05	440.66
GR	258.48	442.49	263.11	448.70	263.15	461.11	264.72	490.48	264.75	502.38
GR	264.76	525.16	265.57	525.16	266	544.64	268	600.93	270	614.87
GR	272	626.62	274	634.72	276	641.48	278	648.01	280	653.69
GR	282	659.21	284	663.77	286	669.23	288	673.92	290	677.84
GR	292	681.98	294	686.79	296	690.84	298	694.19	300	698.44

X1	11	54	443.99	460.79	24	21	29

GR	300	0	298	2.58	296	5.87	294	9.21	292	11.91
GR	290	14.56	288	18.00	286	20.89	284	23.88	282	26.52
GR	280	30.11	278	33.71	276	37.18	274.88	39.10	273.62	39.10
GR	266.20	49.74	266.09	79.80	266.07	112.60	259.99	124.37	261.91	128.58
GR	261.19	128.83	265.31	140.89	265.53	227.60	265.22	298.30	264.97	340.24
GR	265.06	396.37	264.02	443.99	258.95	448.09	258.13	452.75	258.82	454.59
GR	263.45	460.79	263.49	473.20	265.07	502.57	265.10	514.47	265.11	537.25
GR	265.92	537.25	266	540.23	268	595.83	270	612.24	272	623.69
GR	274	632.48	276	639.89	278	646.38	280	652.49	282	658.29
GR	284	663.39	286	668.83	288	673.73	290	677.92	292	682.11
GR	294	686.90	296	690.98	298	694.37	300	698.41		

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

CCHV= .100 CEHV= .300
*SECNO 1.000

1.000	12.80	267.30	261.39	267.30	267.36	.06	.00	.00	262.30
2318.0	1025.3	1266.1	26.6	1541.7	511.2	45.9	.0	.0	262.30
.00	.67	2.48	.58	.080	.040	.080	.000	254.50	93.74
.000235	0.	0.	0.	0	10	0	.00	522.32	616.06

*SECNO 2.000

2.000	13.08	267.32	261.01	.00	267.36	.04	.00	.00	261.89
2318.0	1148.7	1142.5	26.8	1805.0	532.4	51.6	.9	.2	261.89
.00	.64	2.15	.52	.080	.040	.080	.000	254.24	96.62
.000166	15.	24.	19.	1	11	0	.00	515.20	611.82

*SECNO 3.000

3.000	13.34	267.34	260.96	.00	267.37	.02	.00	.00	261.16
2318.0	1259.0	1014.8	44.2	2123.1	567.5	97.6	2.4	.5	261.16
.01	.59	1.79	.45	.080	.040	.080	.000	254.00	100.98
.000105	26.	22.	26.	1	11	0	.00	509.02	610.00

*SECNO 4.000

4.000	15.41	267.38	259.37	.00	267.40	.01	.03	.00	261.01
2318.0	1537.5	722.7	57.8	2789.4	492.0	117.8	30.6	5.3	260.44
.13	.55	1.47	.49	.080	.040	.080	.000	251.97	202.56
.000071	436.	255.	196.	0	14	0	.00	511.55	714.11

*SECNO 5.000

5.000	14.29	267.40	259.51	.00	267.42	.02	.02	.00	261.61
2318.0	1432.2	879.8	6.0	2766.2	551.8	19.6	50.4	8.5	263.60
.21	.52	1.59	.31	.080	.040	.080	.000	253.11	128.25
.000086	257.	253.	251.	0	18	0	.00	602.69	730.94

*SECNO 6.000

6.000	14.12	267.43	258.58	.00	267.45	.02	.03	.00	262.51
2318.0	842.6	1234.8	240.6	2124.2	872.0	622.5	79.1	13.8	262.22
.33	.40	1.42	.39	.080	.040	.080	.000	253.31	138.60
.000064	292.	516.	535.	0	22	0	.00	734.32	872.93

```
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 7.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .66

     7.000     12.61    267.45    260.68       .00    267.48       .04       .03       .01    262.27
    2318.0     392.5    1301.1     624.5     716.5     655.9    1159.4      98.6      17.8    263.22
       .39       .55      1.98       .54      .080      .040      .080      .000    254.84     54.07
   .000147      324.      328.      156.         0        18         0       .00    583.22    637.29


*SECNO 8.000
     8.000     11.91    267.54    262.43       .00    267.59       .05       .11       .00    263.18
    2318.0     175.1    1078.9    1064.0     245.4     437.9    1437.4     129.1      24.9    263.53
       .49       .71      2.46       .74      .080      .040      .080      .000    255.63     58.53
   .000257      476.      552.      612.         2        11         0       .00    498.76    557.28


*SECNO 8.100

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.66

     8.100     11.77    267.59    261.14       .00    267.61       .02       .01       .00    259.59
    2318.0     416.3     835.1    1066.6     651.5     497.1    1870.7     133.4      25.8    259.77
       .51       .64      1.68       .57      .080      .040      .080      .000    255.82     69.55
   .000093       22.       68.       89.         2        18         0       .00    515.31    584.86


*SECNO 8.200
     8.200     11.52    267.59    261.39       .00    267.62       .03       .01       .00    259.85
    2318.0     437.6     959.9     920.4     564.9     485.5    1493.7     139.1      26.8    260.02
       .53       .77      1.98       .62      .080      .040      .080      .000    256.07     64.13
   .000133       96.       91.       86.         1        18         0       .00    484.37    548.50


*SECNO 9.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .50

     9.000     10.69    267.61    263.69       .00    267.70       .09       .07       .02    264.44
    2318.0     134.1    1222.8     961.2     166.3     381.1    1152.5     152.4      30.0    264.79
       .57       .81      3.21       .83      .080      .040      .080      .000    256.92     34.63
   .000524      284.      293.      265.         0        14         0       .00    555.40    590.03
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 10.000

10.000	9.82	267.87	265.96	.00	267.93	.06	.22	.00	263.67
2318.0	1404.3	490.8	422.9	1217.3	133.6	372.3	164.9	33.9	263.11
.63	1.15	3.67	1.14	.080	.040	.080	.000	258.05	34.75
.000821	352.	412.	251.	2	13	0	.00	562.49	597.24

*SECNO 11.000

11.000	9.75	267.88	266.30	.00	267.96	.08	.02	.01	264.02
2318.0	1375.6	541.5	400.8	1086.1	129.0	312.5	165.7	34.2	263.45
.63	1.27	4.20	1.28	.080	.040	.080	.000	258.13	47.32
.001133	24.	29.	21.	0	10	0	.00	545.32	592.64

1
PROFILE FOR STREAM SKELTON CREEK

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  252.     257.     262.     267.     272.     277.     282.     287.     292.     297.
   SECNO   CUMDIS

    1.00     0.  .   I   .      C.L      .E      .        .        .        .        .        .   M  .
    2.00    50.  .   I   .     C L       .E      .        .        .        .        .        .   M  .
    3.00   100.  .  I    .     C .       .E      .        .        .        .        .        .   M  .
           150.  . I     .    CL .       .E      .        .        .        .        .        .   M  .
           200.  . I     .    CL .       .E      .        .        .        .        .        .   M  .
           250.  . I     .   C L .       .E      .        .        .        .        .        .   M  .
           300.  .I      .   C RL .      .E      .        .        .        .        .        .   M  .
    4.00   350.  I       .   C RL .      .E      .        .        .        .        .        .   M  .
           400.  I       .   C  L .      .E      .        .        .        .        .        .   M  .
           450.  .I      .   C   L.      .E      .        .        .        .        .        .   M  .
           500.  .I      .   C   L.R     .E      .        .        .        .        .        .   M  .
           550.  . I     .   C   L. R    .E      .        .        .        .        .        .   M  .
    5.00   600.  . I     .   C   L.  R   .E      .        .        .        .        .        .   M  .
           650.  . I     .   C   L.  R   .E      .        .        .        .        .        .   M  .
           700.  . I     .   C    L  R   .E      .        .        .        .        .        .   M  .
           750.  . I     .   C    L R    .E      .        .        .        .        .        .   M  .
           800.  . I     .  C     L R    .E      .        .        .        .        .        .   M  .
           850.  . I     .  C     L R    .E      .        .        .        .        .        .   M  .
           900.  .  I    .  C     L R    .E      .        .        .        .        .        .   M  .
           950.  .  I    .  C     .L     .E      .        .        .        .        .        .   M  .
          1000.  .  I    .  C     .L     .E      .        .        .        .        .        .   M  .
          1050.  .  I    . C      .L     .E      .        .        .        .        .        .   M  .
    6.00  1100.  .  I    . C      .L     .E      .        .        .        .        .        .   M  .
          1150.  .  I    .  C     .L     .E      .        .        .        .        .        .   M  .
          1200.  .   I   .   C    .L     .E      .        .        .        .        .        .   M  .
          1250.  .   I   .   C    .L     .E      .        .        .        .        .        .   M  .
          1300.  .    I  .    C   .LR    .E      .        .        .        .        .        .   M  .
          1350.  .    I  .    C   .LR    .E      .        .        .        .        .        .   M  .
    7.00  1400.  .     I .     C  .L R   .E      .        .        .        .        .        .   M  .
          1450.  .     I .      C .L R   .E      .        .        .        .        .        .   M  .
          1500.  .     I .      C .L R   .E      .        .        .        .        .        .   M  .
          1550.  .     I .      C .L R   .E      .        .        .        .        .        .   M  .
          1600.  .     I .       C.L R   .E      .        .        .        .        .        .   M  .
          1650.  .     I .       C.L R   .E      .        .        .        .        .        .   M  .
          1700.  .      I .      C. LR   .E      .        .        .        .        .        .   M  .
          1750.  .      I .       C LR   .E      .        .        .        .        .        .   M  .
          1800.  .      I .       C LR   .E      .        .        .        .        .        .   M  .
          1850.  .      I .       C LR   .E      .        .        .        .        .        .   M  .
          1900.  .      I .       .CLR   .E      .        .        .        .        .        .   M  .
    8.00  1950.  .      I .       .CLR   .E      .        .        .        .        .        .   M  .
          2000.  .       I .    LRC.     .E      .        .        .        .        .        .   M  .
    8.10  2050.  .       I .   LR C .    .E      .        .        .        .        .        .   M  .
          2100.  .       I .    L  C.    .E      .        .        .        .        .        .   M  .
    8.20  2150.  .       I .    L  C.    .E      .        .        .        .        .        .   M  .
          2200.  .       I .     LR C    .E      .        .        .        .        .        .   M  .
          2250.  .        I.       LC    .E      .        .        .        .        .        .   M  .
          2300.  .        I.        LC   .E      .        .        .        .        .        .   M  .
          2350.  .        I.        . CR .E      .        .        .        .        .        .   M  .
          2400.  .         I        .  CL .E      .        .        .        .        .        .   M  .
    9.00  2450.  .         I        .  C LR .E    .        .        .        .        .        .   M  .
          2500.  .         I        .   CL  .WE   .        .        .        .        .        .   M  .
          2550.  .         I        .    C  .WE   .        .        .        .        .        .   M  .
          2600.  .        .I        .   LC  .WE   .        .        .        .        .        .   M  .
          2650.  .        .I        .   L C  . E  .        .        .        .        .        .   M  .
          2700.  .        .I        .   L C  . E  .        .        .        .        .        .   M  .
          2750.  .        . I       .  RL  C  . E .        .        .        .        .        .   M  .
          2800.  .        . I       .  RL  C  . E .        .        .        .        .        .   M  .
   10.00  2850.  .        . I       . RL   C . E  .        .        .        .        .        .   M  .
   11.00  2900.  .        . I       .  RL   C. E  .        .        .        .        .        .   M  .
```

T1 Second profile, only one title required

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							280	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2									

```
     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *PROF 2
0

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
      1.000     25.50    280.00       .00    280.00    280.00       .00       .00       .00    262.30
     2318.0    1646.0     621.5      50.5    7659.9    1188.6     320.4        .0        .0    262.30
        .00       .21       .52       .16      .080      .040      .080      .000    254.50     47.60
    .000003        0.        0.        0.         0         0         0       .00    587.71    635.31


 *SECNO 2.000
      2.000     25.76    280.00       .00       .00    280.00       .00       .00       .00    261.89
     2318.0    1647.5     611.0      59.5    7825.5    1209.1     372.0       3.5        .2    261.89
        .02       .21       .51       .16      .080      .040      .080      .000    254.24     50.92
    .000003       15.       24.       19.         0         0         0       .00    584.37    635.29


 *SECNO 3.000
      3.000     26.00    280.00       .00       .00    280.00       .00       .00       .00    261.16
     2318.0    1607.2     600.8     110.0    7863.1    1243.1     641.3       9.1        .6    261.16
        .04       .20       .48       .17      .080      .040      .080      .000    254.00     54.15
    .000003       26.       22.       26.         0         0         0       .00    581.11    635.26


 *SECNO 4.000
      4.000     28.03    280.00       .00       .00    280.00       .00       .00       .00    261.01
     2318.0    1805.5     418.4      94.1    9435.2     991.3     586.9     105.0       6.4    260.44
        .50       .19       .42       .16      .080      .040      .080      .000    251.97     59.73
    .000002      436.      255.      196.         0         0         0       .00    683.31    743.03


 *SECNO 5.000
      5.000     26.89    280.00       .00       .00    280.00       .00       .00       .00    261.61
     2318.0    1825.7     459.2      33.0   10002.8    1130.0     251.7     170.9      10.4    263.60
        .82       .18       .41       .13      .080      .040      .080      .000    253.11     77.45
    .000002      257.      253.      251.         0         0         0       .00    669.97    747.42


 *SECNO 6.000
      6.000     26.69    280.00       .00       .00    280.00       .00       .00       .00    262.51
     2318.0    1275.8     649.7     392.4    8790.4    1842.8    2773.9     270.1      16.3    262.22
       1.32       .15       .35       .14      .080      .040      .080      .000    253.31     89.97
    .000001      292.      516.      535.         0         0         0       .00    818.44    908.41
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 7.000									
7.000	25.16	280.00	.00	.00	280.00	.00	.00	.00	262.27
2318.0	614.3	663.0	1040.8	3315.9	1482.5	5703.1	342.8	20.7	263.22
1.62	.19	.45	.18	.080	.040	.080	.000	254.84	30.67
.000003	324.	328.	156.	0	0	0	.00	679.48	710.15
*SECNO 8.000									
8.000	24.37	280.00	.00	.00	280.01	.00	.00	.00	263.18
2318.0	271.5	549.5	1497.0	1255.7	1034.6	6602.2	470.1	29.0	263.53
2.15	.22	.53	.23	.080	.040	.080	.000	255.63	33.06
.000004	476.	552.	612.	0	0	0	.00	579.21	612.27
*SECNO 8.100									
8.100	24.19	280.01	.00	.00	280.01	.00	.00	.00	259.59
2318.0	450.4	523.4	1344.1	2213.8	1091.7	6647.6	486.2	30.0	259.77
2.23	.20	.48	.20	.080	.040	.080	.000	255.82	37.78
.000003	22.	68.	89.	0	0	0	.00	592.84	630.62
*SECNO 8.200									
8.200	23.94	280.01	.00	.00	280.01	.00	.00	.00	259.85
2318.0	428.6	566.4	1322.9	1919.0	1079.8	6173.4	505.7	31.2	260.02
2.31	.22	.52	.21	.080	.040	.080	.000	256.07	30.77
.000003	96.	91.	86.	0	0	0	.00	570.86	601.63
*SECNO 9.000									
9.000	23.09	280.01	.00	.00	280.01	.00	.00	.00	264.44
2318.0	235.5	514.9	1567.6	1106.1	974.2	6999.9	562.5	34.9	264.79
2.57	.21	.53	.22	.080	.040	.080	.000	256.92	20.92
.000004	284.	293.	265.	0	0	0	.00	619.26	640.18
*SECNO 10.000									
10.000	21.96	280.01	.00	.00	280.01	.00	.00	.00	263.67
2318.0	1528.5	178.3	611.2	6111.4	337.5	2595.3	625.5	39.2	263.11
2.90	.25	.53	.24	.080	.040	.080	.000	258.05	27.01
.000005	352.	412.	251.	0	0	0	.00	626.70	653.71

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 11.000

11.000	21.88	280.01	.00	.00	280.01	.00	.00	.00	264.02
2318.0	1557.7	182.9	577.4	5993.9	332.6	2357.6	630.3	39.5	263.45
2.92	.26	.55	.24	.080	.040	.080	.000	258.13	30.09
.000005	24.	29.	21.	0	0	0	.00	622.42	652.51

1
PROFILE FOR STREAM SKELTON CREEK

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  252.     257.     262.     267.     272.     277.     282.     287.     292.     297.
   SECNO  CUMDIS

    1.00     0. C   I   .       .L      .        .        .    E  .        .        .        .    M  .
    2.00    50. C   I   .       L       .        .        .    E  .        .        .        .    M  .
    3.00   100. C  I    .      L .      .        .        .    E  .        .        .        .    M  .
           150. C  I    .      L .      .        .        .    E  .        .        .        .    M  .
           200. C I     .      L .      .        .        .    E  .        .        .        .    M  .
           250. C I     .      L .      .        .        .    E  .        .        .        .    M  .
           300. CI      .     RL .      .        .        .    E  .        .        .        .    M  .
    4.00   350. I       .     RL .      .        .        .    E  .        .        .        .    M  .
           400. I       .      L .      .        .        .    E  .        .        .        .    M  .
           450. CI      .       L.      .        .        .    E  .        .        .        .    M  .
           500. CI      .       L.R     .        .        .    E  .        .        .        .    M  .
           550. C I     .       L. R    .        .        .    E  .        .        .        .    M  .
    5.00   600. C I     .       L.  R   .        .        .    E  .        .        .        .    M  .
           650. C I     .       L.  R   .        .        .    E  .        .        .        .    M  .
           700. C I     .        L  R   .        .        .    E  .        .        .        .    M  .
           750. C I     .        L R    .        .        .    E  .        .        .        .    M  .
           800. C I     .        L R    .        .        .    E  .        .        .        .    M  .
           850. C I     .        L R    .        .        .    E  .        .        .        .    M  .
           900. C  I    .        L R    .        .        .    E  .        .        .        .    M  .
           950. C  I    .        .L     .        .        .    E  .        .        .        .    M  .
          1000. C  I    .        .L     .        .        .    E  .        .        .        .    M  .
          1050. C  I    .        .L     .        .        .    E  .        .        .        .    M  .
    6.00  1100. C  I    .        .L     .        .        .    E  .        .        .        .    M  .
          1150. C  I    .        .L     .        .        .    E  .        .        .        .    M  .
          1200. C   I   .        .L     .        .        .    E  .        .        .        .    M  .
          1250. C   I   .        .L     .        .        .    E  .        .        .        .    M  .
          1300. C    I  .        .LR    .        .        .    E  .        .        .        .    M  .
          1350. C    I  .        .LR    .        .        .    E  .        .        .        .    M  .
    7.00  1400. C     I .        .L R   .        .        .    E  .        .        .        .    M  .
          1450. C     I .        .L R   .        .        .    E  .        .        .        .    M  .
          1500. C     I .        .L R   .        .        .    E  .        .        .        .    M  .
          1550. C     I .        .L R   .        .        .    E  .        .        .        .    M  .
          1600. C     I .        .L R   .        .        .    E  .        .        .        .    M  .
          1650. C     I .        .L R   .        .        .    E  .        .        .        .    M  .
          1700. C      I .        . LR  .        .        .    E  .        .        .        .    M  .
          1750. C      I .        . LR  .        .        .    E  .        .        .        .    M  .
          1800. C      I .        . LR  .        .        .    E  .        .        .        .    M  .
          1850. C      I .        . LR  .        .        .    E  .        .        .        .    M  .
          1900. C      I .        . LR  .        .        .    E  .        .        .        .    M  .
    8.00  1950. C      I .        . LR  .        .        .    E  .        .        .        .    M  .
          2000. C       I .     LR .     .        .        .    E  .        .        .        .    M  .
    8.10  2050. C       I .    LR  .     .        .        .    E  .        .        .        .    M  .
          2100. C       I .     L  .     .        .        .    E  .        .        .        .    M  .
    8.20  2150. C       I .     L  .     .        .        .    E  .        .        .        .    M  .
          2200. C       I .     LR .     .        .        .    E  .        .        .        .    M  .
          2250. C        I.       L.     .        .        .    E  .        .        .        .    M  .
          2300. C        I.       LR     .        .        .    E  .        .        .        .    M  .
          2350. C        I.       . LR   .        .        .    E  .        .        .        .    M  .
          2400. C         I       .  L   .        .        .    E  .        .        .        .    M  .
    9.00  2450. C         I       .   LR .        .        .    E  .        .        .        .    M  .
          2500. C         I       .   L  .        .        .    E  .        .        .        .    M  .
          2550. C         I       .   L  .        .        .    E  .        .        .        .    M  .
          2600. C        .I       .  L   .        .        .    E  .        .        .        .    M  .
          2650. C        .I       .  L   .        .        .    E  .        .        .        .    M  .
          2700. C        .I       .  L   .        .        .    E  .        .        .        .    M  .
          2750. C        . I      .  RL  .        .        .    E  .        .        .        .    M  .
          2800. C        . I      .  RL  .        .        .    E  .        .        .        .    M  .
   10.00  2850. C        . I      . RL   .        .        .    E  .        .        .        .    M  .
   11.00  2900. C        . I      .  RL  .        .        .    E  .        .        .        .    M  .
```

THIS RUN EXECUTED 24OCT12 20:29:32

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SKELTON CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	254.50	2318.00	267.30	261.39	267.36	2.35	2.48	2098.75	1513.08
	1.000	.00	.00	.00	254.50	2318.00	280.00	.00	280.00	.03	.52	9168.86	12580.62
	2.000	24.00	.00	.00	254.24	2318.00	267.32	261.01	267.36	1.66	2.15	2389.10	1797.15
	2.000	24.00	.00	.00	254.24	2318.00	280.00	.00	280.00	.03	.51	9406.67	13185.48
	3.000	22.00	.00	.00	254.00	2318.00	267.34	260.96	267.37	1.05	1.79	2788.20	2258.36
	3.000	22.00	.00	.00	254.00	2318.00	280.00	.00	280.00	.03	.48	9747.58	14095.46
	4.000	255.00	.00	.00	251.97	2318.00	267.38	259.37	267.40	.71	1.47	3399.21	2742.97
	4.000	255.00	.00	.00	251.97	2318.00	280.00	.00	280.00	.02	.42	11013.37	15229.04
	5.000	253.00	.00	.00	253.11	2318.00	267.40	259.51	267.42	.86	1.59	3337.67	2497.53
	5.000	253.00	.00	.00	253.11	2318.00	280.00	.00	280.00	.02	.41	11384.56	15799.65
	6.000	516.00	.00	.00	253.31	2318.00	267.43	258.58	267.45	.64	1.42	3618.63	2901.49
	6.000	516.00	.00	.00	253.31	2318.00	280.00	.00	280.00	.01	.35	13407.08	19191.79
*	7.000	328.00	.00	.00	254.84	2318.00	267.45	260.68	267.48	1.47	1.98	2531.83	1909.85
	7.000	328.00	.00	.00	254.84	2318.00	280.00	.00	280.00	.03	.45	10501.46	14590.07
	8.000	552.00	.00	.00	255.63	2318.00	267.54	262.43	267.59	2.57	2.46	2120.73	1446.41
	8.000	552.00	.00	.00	255.63	2318.00	280.00	.00	280.01	.04	.53	8892.56	11902.72
*	8.100	68.00	.00	.00	255.82	2318.00	267.59	261.14	267.61	.93	1.68	3019.33	2400.97
	8.100	68.00	.00	.00	255.82	2318.00	280.01	.00	280.01	.03	.48	9953.19	14211.44
	8.200	91.00	.00	.00	256.07	2318.00	267.59	261.39	267.62	1.33	1.98	2544.07	2007.72
	8.200	91.00	.00	.00	256.07	2318.00	280.01	.00	280.01	.03	.52	9172.17	12893.19
*	9.000	293.00	.00	.00	256.92	2318.00	267.61	263.69	267.70	5.24	3.21	1699.87	1012.29
	9.000	293.00	.00	.00	256.92	2318.00	280.01	.00	280.01	.04	.53	9080.15	11489.20

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
10.000	412.00	.00	.00	258.05	2318.00	267.87	265.96	267.93	8.21	3.67	1723.23	808.87
10.000	412.00	.00	.00	258.05	2318.00	280.01	.00	280.01	.05	.53	9044.15	10438.15
11.000	29.00	.00	.00	258.13	2318.00	267.88	266.30	267.96	11.33	4.20	1527.54	688.68
11.000	29.00	.00	.00	258.13	2318.00	280.01	.00	280.01	.05	.55	8684.19	9890.66

SKELTON CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.000	2318.00	267.30	.00	.00	.00	522.32	.00
	1.000	2318.00	280.00	12.70	.00	.00	587.71	.00
	2.000	2318.00	267.32	.00	.02	.00	515.20	24.00
	2.000	2318.00	280.00	12.68	.00	.00	584.37	24.00
	3.000	2318.00	267.34	.00	.02	.00	509.02	22.00
	3.000	2318.00	280.00	12.66	.00	.00	581.11	22.00
	4.000	2318.00	267.38	.00	.04	.00	511.55	255.00
	4.000	2318.00	280.00	12.62	.00	.00	683.31	255.00
	5.000	2318.00	267.40	.00	.02	.00	602.69	253.00
	5.000	2318.00	280.00	12.60	.00	.00	669.97	253.00
	6.000	2318.00	267.43	.00	.03	.00	734.32	516.00
	6.000	2318.00	280.00	12.57	.00	.00	818.44	516.00
*	7.000	2318.00	267.45	.00	.01	.00	583.22	328.00
	7.000	2318.00	280.00	12.56	.00	.00	679.48	328.00
	8.000	2318.00	267.54	.00	.10	.00	498.76	552.00
	8.000	2318.00	280.00	12.46	.00	.00	579.21	552.00
*	8.100	2318.00	267.59	.00	.04	.00	515.31	68.00
	8.100	2318.00	280.01	12.42	.00	.00	592.84	68.00
	8.200	2318.00	267.59	.00	.00	.00	484.37	91.00
	8.200	2318.00	280.01	12.42	.00	.00	570.86	91.00
*	9.000	2318.00	267.61	.00	.02	.00	555.40	293.00
	9.000	2318.00	280.01	12.39	.00	.00	619.26	293.00
	10.000	2318.00	267.87	.00	.25	.00	562.49	412.00
	10.000	2318.00	280.01	12.14	.00	.00	626.70	412.00
	11.000	2318.00	267.88	.00	.01	.00	545.32	29.00
	11.000	2318.00	280.01	12.13	.00	.00	622.42	29.00

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 7.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 8.100 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 9.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CCLAY, INC.

SKELTON CREEK OPERATION

P-3934 R-1

SKELTON CREEK FLOOD STUDY

POST CONSTRUCTION

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES           *
 *                                         *
 *  Version   4.6.2;  May 1991             *
 *                                         *
 *  RUN DATE    07NOV12    TIME   19:02:05 *
 *****************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

```
X     X  XXXXXXX  XXXXX            XXXXX
X     X  X       X    X           X    X
X     X  X       X                     X
XXXXXXX  XXXX    X         XXXXX   XXXXX
X     X  X       X                X
X     X  X       X    X           X
X     X  XXXXXXX  XXXXX           XXXXXXX
```

THIS RUN EXECUTED 07NOV12 19:02:05

```
************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


T1    CCLAY, INC.
T2    SKELTON CREEK OPERATION P-3934 R-1
T3      SKELTON CREEK
T4    POST CONSTRUCTION FLOOD STUDY FOR SKELTON CREEK
T5    First Profile, Q = 2318 cfs based on normal flow depth at Section No. 1
T6    the water surface elevation  = 267.3 ft.
T7    Second Profile Q = 2318 cfs based on FEMA flood elevation at Section No. 1
T8    the water surface elevation = 280.0 ft.



      Zero values indicate subcritical profile starting with known elevation.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                2                   0         0                                   267.3


      Manning's "n" = .08 overbanks & .04 channel
      Contraction coef. 0.1 and Expansion coef. 0.3

NC      .08       .08       .04        .1        .3


QT        2      2318      2318


X1        1        51    549.05    602.39
GR      300         0       298      4.69       296      9.44       294     14.09       292     18.46
GR      290     22.96       288     27.79       286     32.16       284     37.23       282     42.18
GR      280     47.60       278     52.94       276     58.35       274     64.62       272     71.41
GR      270     79.76       268     89.07       266    102.40       264    208.39    262.42    445.18
GR   263.21    445.18    263.62    462.50    264.76    495.51    265.08    527.52    262.30    549.05
GR   257.19    560.14    256.02    566.87    254.52    570.14    254.50    576.75       256    580.34
GR   256.88    587.97    260.87    596.45    262.30    602.39    265.59    616.06    269.99    616.06
GR      270    616.09       272    620.60       274    624.41       276    628.23       278    631.84
GR      280    635.31       282    639.23       284    643.21       286    646.56       288    650.05
GR      290    653.63       292    657.62       294    660.62       296    664.23       298    667.92
GR      300    671.66
```

X1	2	54	544.81	598.15	15	19	24			
GR	300	0.00	298	5.44	296	10.78	294	15.83	292	20.98
GR	290	25.81	288	30.20	286	35.15	284	40.33	282	45.42
GR	280	50.92	278	56.38	276	61.20	274	68.27	272	74.36
GR	270	81.94	268	91.55	266	106.31	264	185.96	262	294.80
GR	262	393.21	262	440.94	262.79	440.94	263.21	458.25	264.34	491.26
GR	264.66	523.28	261.89	544.81	256.77	555.90	255.60	562.62	254.26	565.90
GR	254.24	572.50	255.58	576.10	256.47	583.73	260.46	592.20	261.89	598.15
GR	265.18	611.82	267.70	611.82	268	612.53	270	615.85	272	620.37
GR	274	624.20	276	628.08	278	631.92	280	635.29	282	639.28
GR	284	643.23	286	646.25	288	650.02	290	653.99	292	657.53
GR	294	660.89	296	664.49	298	668.17	300	671.93		

X1	3	50	432.10	580.25	26	26	22			
GR	300	0.00	298	5.36	296	11.28	294	16.65	292	22.06
GR	290	27.56	288	32.54	286	38.05	284	43.34	282	48.57
GR	280	54.15	278	59.72	276	64.91	274	71.81	272	77.62
GR	270	85.50	266	112.20	266	432.10	262.59	443.51	263.62	473.36
GR	263.93	505.38	261.16	526.91	256.04	538.00	254.87	544.72	254.02	548.00
GR	254.00	554.60	254.85	558.20	255.74	565.83	259.73	574.30	261.16	580.25
GR	264.45	593.92	264.45	602.47	266	606.62	268	611.69	270	615.62
GR	272	620.16	274	624.00	276	627.93	278	631.99	280	635.26
GR	282	639.34	284	643.25	286	646.53	288	649.99	290	654.34
GR	292	657.44	294	661.15	296	664.74	298	668.41	300	672.19

X1	4	49	577.51	692.58	436	196	255			
GR	300	0	298	6.12	296	12.70	294	18.54	292	24.98
GR	290	30.58	288	36.02	286	42.07	284	47.25	282	53.13
GR	280	59.73	278	67.31	276	78.01	274	117.64	272	163.00
GR	270	181.80	270.00	577.51	266.00	588.02	262.00	598.52	261.64	601.75
GR	262.21	636.99	261.01	653.02	251.97	655.07	253.19	672.38	254.71	677.25
GR	257.17	680.22	257.48	686.34	260.44	692.58	261.56	703.20	261.84	709.34
GR	264.72	712.98	266.97	712.98	268	715.81	270	721.15	272	726.36
GR	274	731.51	276	735.02	278	739.59	280	743.03	282	746.05
GR	284	749.92	286	752.85	288	755.53	290	758.04	292	760.89
GR	294	763.71	296	766.55	298	769.18	300	771.68		

X1	5	47	562.82	721.49	257	251	253			
GR	300	0.00	298	10.15	296	19.03	294	27.12	292	35.24
GR	290	43.34	288	49.27	286	56.63	284	64.17	282	70.54
GR	280	77.46	278	85.15	276	91.90	274	99.29	272	107.12
GR	270	114.54	270	562.82	262	591.55	262	597.62	261.61	675.59
GR	254.38	678.32	253.11	686.97	254.73	707.23	256.34	709.36	257.13	709.81
GR	258.87	718.97	261.28	721.49	263.60	721.49	264	723.06	266	728.00
GR	268	732.18	270	735.22	272	738.48	274	740.41	276	742.85
GR	278	745.22	280	747.42	282	749.19	284	750.99	286	752.76
GR	288	754.52	290	756.23	292	757.20	294	759.17	296	760.58
GR	298	762.32	300	763.91						

X1	6	48	511.18	779.95	292	535	516			
GR	300	0.00	298	20.56	296	33.10	294	43.74	292	51.92
GR	290	59.14	288	64.94	286	72.19	284	77.94	282	83.65
GR	280	89.98	278	95.89	276	102.93	274	110.03	272	117.26
GR	270	125.47	270.00	511.18	266.00	532.93	264.00	543.80	264	582.06
GR	262.51	612.72	262.51	642.36	257.63	659.90	257.00	668.47	253.31	677.50
GR	254.09	697.09	255.67	717.64	260.91	719.61	262.22	719.61	262.75	760.52
GR	266	769.22	270.00	779.95	270	880.84	272	886.11	274	891.74
GR	276	896.71	278	902.48	280	908.40	282	916.02	284	927.70
GR	286	960.58	288	997.56	290	1006.38	292	1012.47	294	1018.37
GR	296	1022.98	298	1028.14	300	1032.96				

X1	7	51	177.84	375.28	324	156	328			
GR	300	0	298	3.16	296	6.07	294	8.74	292	11.92
GR	290	15.06	288	18.23	286	21.21	284	24.48	282	27.50
GR	280	30.68	278	33.82	276	37.02	274	39.84	272	43.60
GR	270	47.74	270.00	165.84	270.00	177.84	263.40	194.60	263.43	213.66
GR	262.27	248.23	258.07	252.89	258.40	256.61	259.40	263.32	259.42	270.42
GR	256.64	277.63	254.84	286.85	254.85	291.38	255.82	305.76	263.22	314.08
GR	263.52	322.93	262.90	345.74	262.90	355.00	266	363.85	270.00	375.28
GR	270	653.12	272	666.59	274	680.16	276	691.36	278	699.90
GR	280	710.13	282	720.18	284	730.19	286	740.08	288	748.03
GR	290	755.48	292	761.47	294	767.27	296	772.14	298	777.51
GR	300	782.38								

X1	8	51	85.76	337.03	476	612	552			
GR	300	0	298	2.60	296	5.78	294	9.00	292	12.56
GR	290	16.25	288	18.90	286	22.22	284	25.68	282	29.28
GR	280	33.07	278	37.27	276	41.32	274	45.60	273.26	47.50
GR	272.41	47.50	270.00	52.96	270.00	85.76	263.68	101.73	263.66	103.20
GR	263.18	126.73	260.65	135.81	259.13	138.54	257.16	148.13	255.63	157.23
GR	255.80	160.79	257.24	169.37	263.53	174.62	263.58	197.08	259.88	207.31
GR	260.41	212.31	263.43	222.06	262.93	260.96	266	289.63	270.00	337.03
GR	270	573.75	272	584.21	274	592.04	276	599.16	278	605.91
GR	280	612.26	282	618.44	284	625.17	286	630.82	288	636.15
GR	290	641.78	292	646.40	294	651.22	296	655.71	298	660.69
GR	300	665.78								
NC				0.6	0.8					
NH	3	0.08	178.23	0.04	234.53	0.08	672.93			
X1	8.1	56	197.98	232.40	22	89	68			
X3	10							267.70	267.70	
GR	300	0.0	298	3.71	296	7.50	294	11.09	292	15.18
GR	290	19.34	288	22.19	286	25.89	284	29.69	282	33.65
GR	280	37.79	278	42.33	276	46.68	274	51.11	272	56.72
GR	270	61.42	268	68.01	267.70	69.13	267.70	121.65	259.93	138.69
GR	259.83	154.70	259.59	178.23	258.33	187.30	257.57	190.04	255.82	195.85
GR	255.82	197.98	255.82	232.40	255.82	234.53	259.79	248.58	257.94	258.81
GR	258.21	263.80	259.72	273.56	262	305.04	262	310.36	261.61	346.49
GR	262	361.35	263.07	463.10	267.70	472.36	267.70	585.68	268	587.84
GR	270	598.23	272	606.08	274	612.50	276	618.65	278	625.04
GR	280	630.61	282	636.06	284	641.51	286	646.16	288	650.50
GR	290	654.59	292	657.63	294	661.87	296	665.71	298	669.72
GR	300	672.93								
SC	4.024	0.8	3.0		7.0		85.00	2.3	256.07	255.82
NH	3	0.08	154.39	0.04	202.28	0.08	646.71			
X1	8.2	56	159.72	194.13	96	86	91			
X2			2		267.70					
X3	10							267.70	267.70	

BT	-37	0.0	300	2.86	298	5.33	296
BT		8.89	294	11.44	292	14.12	290
BT		16.85	288	20.09	286	23.73	284
BT		27.24	282	30.78	280	34.71	278
BT		39.08	276	44.07	274	48.90	272
BT		54.76	270	62.27	268	63.65	267.70
BT		543.75	267.70	547.29	269.47	561.30	269.47
BT		564.92	270	574.27	272	581.94	274
BT		588.98	276	595.26	278	601.61	280
BT		607.72	282	613.16	284	618.22	286
BT		622.82	288	626.55	290	630.79	292
BT		635.13	294	639.04	296	643.01	298
BT		646.71	300				

GR	300	0.0	298	2.86	296	5.33	294	8.89	292	11.44
GR	290	14.12	288	16.85	286	20.09	284	23.73	282	27.24
GR	280	30.78	278	34.71	276	39.08	274	44.07	272	48.90
GR	270	54.76	268	62.27	266	71.49	264.46	75.17	260.31	93.98
GR	260.09	130.86	259.85	154.39	256.07	157.58	256.07	159.72	256.07	194.13
GR	256.07	196.27	256.88	197.03	260.02	202.28	260.05	224.74	258.20	234.98
GR	258.46	239.97	259.97	249.72	264	260.73	264	399.60	262.45	439.33
GR	264	504.52	266	534.63	266.86	542.06	269.47	547.29	269.47	561.30
GR	270	564.92	272	574.27	274	581.94	276	588.98	278	595.26
GR	280	601.61	282	607.72	284	613.16	286	618.22	288	622.82
GR	290	626.55	292	630.79	294	635.13	296	639.04	298	643.01
GR	300	646.71								

X1	9	44	100.15	148.04	284	265	293

GR	300	0.00	298	2.56	296	5.75	294	8.48	292	11.44
GR	290	14.08	288	17.00	286	20.09	285.46	20.92	273.67	20.92
GR	265.37	39.74	264.92	76.62	264.44	100.15	261.91	109.23	260.39	111.96
GR	258.42	121.56	256.92	130.65	257.06	134.21	258.50	142.79	264.79	148.04
GR	264.84	170.50	261.14	180.74	261.67	185.73	264.69	195.48	264.11	240.35
GR	264.38	240.35	266	573.23	268	593.95	270	605.68	270.22	606.79
GR	276.09	618.53	276.09	629.64	278	634.98	280	640.17	282	644.81
GR	284	649.26	286	653.47	288	658.35	290	661.95	292	666.01
GR	294	670.20	296	674.13	298	677.99	300	681.50		

NC	0.08	0.08	0.04	0.1	0.3

X1	10	50	431.90	448.70	352	251	412			
GR	300	0.00	298	3.49	296	6.48	294	9.87	292	13.11
GR	290	15.86	288	18.30	286	21.99	284	24.85	282.73	27.01
GR	273.27	27.01	265.85	37.65	265.74	67.70	265.72	100.51	259.64	112.28
GR	261.56	116.49	260.85	116.74	264.96	128.79	265.18	215.51	264.88	286.21
GR	264.62	328.15	264.72	384.28	263.67	431.90	258.60	436.00	258.05	440.66
GR	258.48	442.49	263.11	448.70	263.15	461.11	264.72	490.48	264.75	502.38
GR	264.76	525.16	265.57	525.16	266	544.64	268	600.93	270	614.87
GR	270.54	618.05	276.13	629.23	276.13	641.91	278	648.01	280	653.69
GR	282	659.21	284	663.77	286	669.23	288	673.92	290	677.84
GR	292	681.98	294	686.79	296	690.84	298	694.19	300	698.44

X1	11	54	443.99	460.79	24	21	29			
GR	300	0	298	2.58	296	5.87	294	9.21	292	11.91
GR	290	14.56	288	18.00	286	20.89	284	23.88	282	26.52
GR	280	30.11	278	33.71	276	37.18	274.88	39.10	273.62	39.10
GR	266.20	49.74	266.09	79.80	266.07	112.60	259.99	124.37	261.91	128.58
GR	261.19	128.83	265.31	140.89	265.53	227.60	265.22	298.30	264.97	340.24
GR	265.06	396.37	264.02	443.99	258.95	448.09	258.13	452.75	258.82	454.59
GR	263.45	460.79	263.49	473.20	265.07	502.57	265.10	514.47	265.11	537.25
GR	265.92	537.25	266	540.23	268	595.83	270	612.24	270.83	616.99
GR	276.11	627.56	276.11	640.25	278	646.38	280	652.49	282	658.29
GR	284	663.39	286	668.83	288	673.73	290	677.92	292	682.11
GR	294	686.90	296	690.98	298	694.37	300	698.41		

```
     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *PROF 1
0

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
      1.000     12.80    267.30       .00    267.30    267.36       .06       .00       .00    262.30
     2318.0    1025.3    1266.1      26.6    1541.7     511.2      45.9        .0        .0    262.30
        .00       .67      2.48       .58      .080      .040      .080      .000    254.50     93.74
    .000235        0.        0.        0.         0         0         0       .00    522.32    616.06


 *SECNO 2.000
      2.000     13.08    267.32       .00       .00    267.36       .04       .00       .00    261.89
     2318.0    1148.7    1142.5      26.8    1805.0     532.4      51.6        .9        .2    261.89
        .00       .64      2.15       .52      .080      .040      .080      .000    254.24     96.62
    .000166       15.       24.       19.         1         0         0       .00    515.20    611.82


 *SECNO 3.000
      3.000     13.31    267.31       .00       .00    267.37       .07       .01       .01    266.00
     2318.0     164.5    2078.8      74.7     423.7     941.4      96.8       2.0        .5    261.16
        .01       .39      2.21       .77      .080      .040      .080      .000    254.00    103.48
    .000309       26.       22.       26.         2         0         0       .00    506.45    609.93


 *SECNO 4.000
      4.000     15.40    267.37       .00       .00    267.47       .10       .09       .01    270.00
     2318.0        .0    2186.4     131.6        .0     832.3     117.7       9.8       3.0    260.44
        .04       .00      2.63      1.12      .000      .040      .080      .000    251.97    584.40
    .000371      436.      255.      196.         0         0         0       .00    129.69    714.10


 *SECNO 5.000
      5.000     14.37    267.48       .00       .00    267.55       .07       .08       .00    270.00
     2318.0        .0    2307.1      10.9        .0    1085.3      20.3      15.7       3.8    263.60
        .07       .00      2.13       .53      .000      .040      .080      .000    253.11    571.86
    .000255      257.      253.      251.         2         0         0       .00    159.24    731.10


 *SECNO 6.000
      6.000     14.31    267.62       .00       .00    267.65       .03       .09       .00    270.00
     2318.0        .0    2318.0        .0        .0    1588.1        .0      31.7       6.3    270.00
        .17       .00      1.46       .00      .000      .040      .000      .000    253.31    524.11
    .000136      292.      516.      535.         0         0         0       .00    249.47    773.57
```

```
     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 7.000
      7.000    12.82    267.66       .00       .00    267.72       .06       .06       .01    270.00
     2318.0       .0    2318.0        .0        .0    1156.5        .0      42.0       7.9    270.00
        .21      .00      2.00       .00      .000      .040      .000      .000    254.84    183.77
    .000265     324.      328.      156.         1         0         0       .00    184.83    368.60


*SECNO 8.000
      8.000    12.19    267.82       .00       .00    267.89       .06       .17       .00    270.00
     2318.0       .0    2318.0        .0        .0    1133.5        .0      56.5      10.5    270.00
        .29      .00      2.05       .00      .000      .040      .000      .000    255.63     91.26
    .000354     476.      552.      612.         2         0         0       .00    219.98    311.24


CCHV=     .600 CEHV=     .800
1490 NH CARD USED
*SECNO 8.100

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.00

      8.100    12.08    267.90       .00       .00    267.92       .02       .01       .02    255.82
     2318.0    578.5     764.5     975.0     600.5     415.8    1552.1      59.5      11.1    255.82
        .30      .96      1.84       .63      .058      .040      .078      .000    255.82     68.38
    .000088      22.       68.       89.         2         0         0       .00    518.74    587.12



SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     4          .024      .80      3.00       .00      7.00       .00     85.00      2         3       256.07    255.82

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

1490 NH CARD USED
*SECNO 8.200

SPECIAL CULVERT OUTLET CONTROL + WEIR FLOW EG =    268.77
SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
    272.38    276.62       .84     1594.      730.     1.684     153.9    267.70      486.


      8.200    12.68    268.75       .00       .00    268.77       .02       .84       .00    256.07
     2318.0    496.2     735.4    1086.4     734.1     436.6    1980.0      65.3      12.1    256.07
        .33      .68      1.68       .55      .073      .040      .075      .000    256.07     59.43
    .000069      96.       91.       86.         1         0         0       .00    486.44    545.86
```

```
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 9.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .48

     9.000     11.87    268.79       .00       .00    268.80       .02       .03       .00    264.44
    2318.0     187.5     581.3    1549.1     243.6     436.4    1669.1      82.5      15.3    264.79
       .41       .77      1.33       .93      .080      .080      .068      .000    256.92     32.01
   .000302      284.      293.      265.         1         0         0       .00    566.50    598.51


CCHV=     .100 CEHV=     .300
*SECNO 10.000
    10.000     10.83    268.88       .00       .00    268.91       .03       .10       .00    263.67
    2318.0    1466.1     394.5     457.4    1620.4     150.6     529.0      99.2      19.3    263.11
       .48       .90      2.62       .86      .080      .040      .080      .000    258.05     33.30
   .000356      352.      412.      251.         2         0         0       .00    573.78    607.08


*SECNO 11.000
    11.000     10.76    268.89       .00       .00    268.92       .04       .01       .00    264.02
    2318.0    1458.7     426.8     432.5    1485.4     145.8     451.2     100.4      19.6    263.45
       .49       .98      2.93       .96      .080      .040      .080      .000    258.13     45.88
   .000467       24.       29.       21.         0         0         0       .00    557.25    603.13
```

1
PROFILE FOR STREAM SKELTON CREEK

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  252.     257.     262.     267.     272.     277.     282.     287.     292.     297.
   SECNO   CUMDIS

    1.00     0. C   I   .       .L      .E      .       .       .       .       .       .    M  .
    2.00    50. C   I   .       L       .E      .       .       .       .       .       .    M  .
    3.00   100. C  I    .     R .     L .E      .       .       .       .       .       .    M  .
           150. C  I    .     R .       LE      .       .       .       .       .       .    M  .
           200. C I     .     R .       .E      .       .       .       .       .       .    M  .
           250. C I     .     R .       .E L    .       .       .       .       .       .    M  .
           300. CI      .    R  .       .E  L   .       .       .       .       .       .    M  .
    4.00   350. I       .    R  .       .E   L  .       .       .       .       .       .    M  .
           400. I       .     R .       .E   L  .       .       .       .       .       .    M  .
           450. CI      .      R.       .E   L  .       .       .       .       .       .    M  .
           500. CI      .       .R      .E   L  .       .       .       .       .       .    M  .
           550. C I     .       . R     .E   L  .       .       .       .       .       .    M  .
    5.00   600. C I     .       .  R    .E   L  .       .       .       .       .       .    M  .
           650. C I     .       .   R   .E   L  .       .       .       .       .       .    M  .
           700. C I     .       .    R  .E   L  .       .       .       .       .       .    M  .
           750. C I     .       .     R .E   L  .       .       .       .       .       .    M  .
           800. C I     .       .      R.E   L  .       .       .       .       .       .    M  .
           850. C I     .       .       R.E   L  .       .       .       .       .       .    M  .
           900. C  I    .       .       .E   L  .       .       .       .       .       .    M  .
           950. C  I    .       .       .ER  L  .       .       .       .       .       .    M  .
          1000. C  I    .       .       .E R L  .       .       .       .       .       .    M  .
          1050. C  I    .       .       .E  R L .       .       .       .       .       .    M  .
    6.00  1100. C  I    .       .       .E   L  .       .       .       .       .       .    M  .
          1150. C  I    .       .       .E   L  .       .       .       .       .       .    M  .
          1200. C   I   .       .       .E   L  .       .       .       .       .       .    M  .
          1250. C   I   .       .       .E   L  .       .       .       .       .       .    M  .
          1300. C   I   .       .       .E   L  .       .       .       .       .       .    M  .
          1350. C   I   .       .       .E   L  .       .       .       .       .       .    M  .
    7.00  1400. C    I  .       .       .WE  L  .       .       .       .       .       .    M  .
          1450. C    I  .       .       .WE  L  .       .       .       .       .       .    M  .
          1500. C    I  .       .       .WE  L  .       .       .       .       .       .    M  .
          1550. C    I  .       .       .WE  L  .       .       .       .       .       .    M  .
          1600. C    I  .       .       .WE  L  .       .       .       .       .       .    M  .
          1650. C    I  .       .       . E  L  .       .       .       .       .       .    M  .
          1700. C     I .       .       . E  L  .       .       .       .       .       .    M  .
          1750. C     I .       .       . E  L  .       .       .       .       .       .    M  .
          1800. C     I .       .       . E  L  .       .       .       .       .       .    M  .
          1850. C     I .       .       . E  L  .       .       .       .       .       .    M  .
          1900. C     I .       .       . E  L  .       .       .       .       .       .    M  .
    8.00  1950. C     I .       .       . E  L  .       .       .       .       .       .    M  .
          2000. C      I .   L  .       . E     .       .       .       .       .       .    M  .
    8.10  2050. C      I .       .       . E     .       .       .       .       .       .    M  .
          2100. C      I .       .       .  E    .       .       .       .       .       .    M  .
    8.20  2150. C      I .       .       .   E   .       .       .       .       .       .    M  .
          2200. C      I .L      .       .   E   .       .       .       .       .       .    M  .
          2250. C       I.   L   .       .   E   .       .       .       .       .       .    M  .
          2300. C       I.     L .       .   E   .       .       .       .       .       .    M  .
          2350. C       I.       L       .   E   .       .       .       .       .       .    M  .
          2400. C        I       . LR    .   E   .       .       .       .       .       .    M  .
    9.00  2450. C        I       .   LR  .   E   .       .       .       .       .       .    M  .
          2500. C        I       .   L   .   E   .       .       .       .       .       .    M  .
          2550. C        I       .   L   .   E   .       .       .       .       .       .    M  .
          2600. C        .I      .  L    .   E   .       .       .       .       .       .    M  .
          2650. C        .I      .  L    .   E   .       .       .       .       .       .    M  .
          2700. C        .I      .  L    .   E   .       .       .       .       .       .    M  .
          2750. C        . I     .  RL   .   E   .       .       .       .       .       .    M  .
          2800. C        . I     .  RL   .   E   .       .       .       .       .       .    M  .
   10.00  2850. C        . I     . RL    .   E   .       .       .       .       .       .    M  .
   11.00  2900. C        . I     .  RL   .   E   .       .       .       .       .       .    M  .
```

T1 Second profile, only one title required

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		3							280	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2									

```
     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *PROF 2
0

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
      1.000     25.50    280.00       .00    280.00    280.00       .00       .00       .00    262.30
     2318.0    1646.0     621.5      50.5    7659.9    1188.6     320.4        .0        .0    262.30
        .00       .21       .52       .16      .080      .040      .080      .000    254.50     47.60
    .000003        0.        0.        0.         0         0         0       .00    587.71    635.31


 *SECNO 2.000
      2.000     25.76    280.00       .00       .00    280.00       .00       .00       .00    261.89
     2318.0    1647.5     611.0      59.5    7825.5    1209.1     372.0       3.5        .2    261.89
        .02       .21       .51       .16      .080      .040      .080      .000    254.24     50.92
    .000003       15.       24.       19.         0         0         0       .00    584.37    635.29


 *SECNO 3.000
      3.000     26.00    280.00       .00       .00    280.00       .00       .00       .00    266.00
     2318.0     915.7    1285.6     116.7    4966.3    2822.0     641.3       8.6        .6    261.16
        .04       .18       .46       .18      .080      .040      .080      .000    254.00     54.15
    .000003       26.       22.       26.         0         0         0       .00    581.11    635.26


 *SECNO 4.000
      4.000     28.03    280.00       .00       .00    280.00       .00       .00       .00    270.00
     2318.0     871.3    1307.9     138.7    4682.1    2275.9     586.8      74.6       6.0    260.44
        .26       .19       .57       .24      .080      .040      .080      .000    251.97     59.73
    .000005      436.      255.      196.         0         0         0       .00    683.30    743.03


 *SECNO 5.000
      5.000     26.89    280.00       .00       .00    280.00       .00       .00       .00    270.00
     2318.0     767.1    1507.5      43.4    4670.0    3060.2     251.7     120.1      10.0    263.60
        .44       .16       .49       .17      .080      .040      .080      .000    253.11     77.46
    .000004      257.      253.      251.         0         0         0       .00    669.97    747.42


 *SECNO 6.000
      6.000     26.69    280.00       .00       .00    280.01       .00       .00       .00    270.00
     2318.0     477.8    1708.2     132.1    4045.8    4892.9    1144.3     205.0      16.5    270.00
        .88       .12       .35       .12      .080      .040      .080      .000    253.31     89.97
    .000002      292.      516.      535.         0         0         0       .00    818.45    908.42
```

```
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 7.000
     7.000     25.16    280.00       .00       .00    280.01       .00       .00       .00    270.00
    2318.0     214.6    1629.5     473.9    1392.2    3578.5    3088.2     264.7      21.2    270.00
      1.11       .15       .46       .15      .080      .040      .080      .000    254.84     30.67
   .000003      324.      328.      156.         0         0         0       .00    679.48    710.16


*SECNO 8.000
     8.000     24.38    280.01       .00       .00    280.01       .00       .00       .00    270.00
    2318.0      63.5    1846.1     408.4     426.2    4160.5    2580.0     363.5      29.5    270.00
      1.52       .15       .44       .16      .080      .040      .080      .000    255.63     33.06
   .000004      476.      552.      612.         0         0         0       .00    579.22    612.28


CCHV=     .600 CEHV=     .800
1490 NH CARD USED
*SECNO 8.100
     8.100     24.19    280.01       .00       .00    280.01       .00       .00       .00    255.82
    2318.0     595.5     443.7    1278.8    2368.0     832.5    6140.8     377.0      30.4    255.82
      1.59       .25       .53       .21      .065      .040      .079      .000    255.82     37.78
   .000003       22.       68.       89.         0         0         0       .00    592.85    630.63



SPECIAL CULVERT

SC  CUNO      CUNV      ENTLC     COFQ      RDLEN     RISE      SPAN      CULVLN    CHRT      SCL       ELCHU     ELCHD
     4          .024      .80      3.00       .00      7.00       .00     85.00      2         3       256.07    255.82

CHART  2 - CORRUGATED METAL PIPE CULVERT
SCALE  3 - PIPE PROJECTING FROM FILL

1490 NH CARD USED
*SECNO 8.200

SPECIAL CULVERT OUTLET CONTROL + WEIR FLOW EG =    280.01
SPECIAL CULVERT

     EGIC      EGOC        H4     QWEIR     QCULV       VCH     ACULV     ELTRD    WEIRLN
    272.38    288.73       .00     2260.       60.      .548     153.9    267.70      571.


     8.200     23.94    280.01       .00       .00    280.01       .00       .00       .00    256.07
    2318.0     478.6     451.2    1388.2    2041.6     823.9    6338.6     395.9      31.6    256.07
      1.67       .23       .55       .22      .075      .040      .077      .000    256.07     30.75
   .000003       96.       91.       86.         0         0         0       .00    570.90    601.65


*SECNO 9.000
     9.000     23.09    280.01       .00       .00    280.02       .00       .00       .00    264.44
    2318.0     244.2     267.0    1806.8    1106.6     974.5    6962.8     452.7      35.3    264.79
      1.97       .22       .27       .26      .080      .080      .072      .000    256.92     20.92
   .000004      284.      293.      265.         0         0         0       .00    619.28    640.20
```

```
     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 CCHV=     .100 CEHV=     .300
 *SECNO 10.000
     10.000     21.97    280.02       .00       .00    280.02       .00       .00       .00    263.67
     2318.0    1535.4     179.0     603.6    6114.6     337.7    2553.5     515.5      39.6    263.11
       2.28       .25       .53       .24      .080      .040      .080      .000    258.05     27.01
    .000005      352.      412.      251.         0         0         0       .00    626.72    653.73


 *SECNO 11.000
     11.000     21.89    280.02       .00       .00    280.02       .00       .00       .00    264.02
     2318.0    1564.2     183.7     570.1    5997.0     332.8    2319.9     520.2      39.9    263.45
       2.31       .26       .55       .25      .080      .040      .080      .000    258.13     30.08
    .000006       24.       29.       21.         0         0         0       .00    622.45    652.54
```

1
PROFILE FOR STREAM SKELTON CREEK

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  252.     257.     262.     267.     272.     277.     282.     287.     292.     297.
   SECNO   CUMDIS

    1.00     0. C   I   .       .L      .       .       .    E  .       .       .       .    M  .
    2.00    50. C   I   .       L       .       .       .    E  .       .       .       .    M  .
    3.00   100. C  I    .      R .     L .      .       .    E  .       .       .       .    M  .
           150. C  I    .      R .       L      .       .    E  .       .       .       .    M  .
           200. C I     .      R .      .L      .       .    E  .       .       .       .    M  .
           250. C I     .      R .       . L    .       .    E  .       .       .       .    M  .
           300. CI      .     R  .       .  L   .       .    E  .       .       .       .    M  .
    4.00   350. I       .     R  .       .   L  .       .    E  .       .       .       .    M  .
           400. I       .      R .       .   L  .       .    E  .       .       .       .    M  .
           450. CI      .       R.       .   L  .       .    E  .       .       .       .    M  .
           500. CI      .       .R       .   L  .       .    E  .       .       .       .    M  .
           550. C I     .       . R      .   L  .       .    E  .       .       .       .    M  .
    5.00   600. C I     .       .  R     .   L  .       .    E  .       .       .       .    M  .
           650. C I     .       .   R    .   L  .       .    E  .       .       .       .    M  .
           700. C I     .       .    R   .   L  .       .    E  .       .       .       .    M  .
           750. C I     .       .     R  .   L  .       .    E  .       .       .       .    M  .
           800. C I     .       .      R .   L  .       .    E  .       .       .       .    M  .
           850. C I     .       .       R.   L  .       .    E  .       .       .       .    M  .
           900. C  I    .       .        .R  L  .       .    E  .       .       .       .    M  .
           950. C  I    .       .        . R L  .       .    E  .       .       .       .    M  .
          1000. C  I    .       .        .  R L  .       .    E  .       .       .       .    M  .
          1050. C  I    .       .        .   R L .       .    E  .       .       .       .    M  .
    6.00  1100. C  I    .       .        .   L  .       .    E  .       .       .       .    M  .
          1150. C  I    .       .        .   L  .       .    E  .       .       .       .    M  .
          1200. C   I   .       .        .   L  .       .    E  .       .       .       .    M  .
          1250. C   I   .       .        .   L  .       .    E  .       .       .       .    M  .
          1300. C   I   .       .        .   L  .       .    E  .       .       .       .    M  .
          1350. C   I   .       .        .   L  .       .    E  .       .       .       .    M  .
    7.00  1400. C    I  .       .        .   L  .       .    E  .       .       .       .    M  .
          1450. C    I  .       .        .   L  .       .    E  .       .       .       .    M  .
          1500. C    I  .       .        .   L  .       .    E  .       .       .       .    M  .
          1550. C    I  .       .        .   L  .       .    E  .       .       .       .    M  .
          1600. C    I  .       .        .   L  .       .    E  .       .       .       .    M  .
          1650. C    I  .       .        .   L  .       .    E  .       .       .       .    M  .
          1700. C     I .       .        .   L  .       .    E  .       .       .       .    M  .
          1750. C     I .       .        .   L  .       .    E  .       .       .       .    M  .
          1800. C     I .       .        .   L  .       .    E  .       .       .       .    M  .
          1850. C     I .       .        .   L  .       .    E  .       .       .       .    M  .
          1900. C     I .       .        .   L  .       .    E  .       .       .       .    M  .
    8.00  1950. C     I .       .        .   L  .       .    E  .       .       .       .    M  .
          2000. C      I .   L  .        .      .       .    E  .       .       .       .    M  .
    8.10  2050. C      I .       .        .      .       .    E  .       .       .       .    M  .
          2100. C      I .       .        .      .       .    E  .       .       .       .    M  .
    8.20  2150. C      I .       .        .      .       .    E  .       .       .       .    M  .
          2200. C      I .L      .        .      .       .    E  .       .       .       .    M  .
          2250. C       I.   L   .        .      .       .    E  .       .       .       .    M  .
          2300. C       I.     L .        .      .       .    E  .       .       .       .    M  .
          2350. C       I.       L        .      .       .    E  .       .       .       .    M  .
          2400. C        I       . LR     .      .       .    E  .       .       .       .    M  .
    9.00  2450. C        I       .   LR   .      .       .    E  .       .       .       .    M  .
          2500. C        I       .   L    .      .       .    E  .       .       .       .    M  .
          2550. C        I       .   L    .      .       .    E  .       .       .       .    M  .
          2600. C        .I      .  L     .      .       .    E  .       .       .       .    M  .
          2650. C        .I      .  L     .      .       .    E  .       .       .       .    M  .
          2700. C        .I      .  L     .      .       .    E  .       .       .       .    M  .
          2750. C        . I     .  RL    .      .       .    E  .       .       .       .    M  .
          2800. C        . I     .  RL    .      .       .    E  .       .       .       .    M  .
   10.00  2850. C        . I     . RL     .      .       .    E  .       .       .       .    M  .
   11.00  2900. C        . I     .  RL    .      .       .    E  .       .       .       .    M  .
```

THIS RUN EXECUTED 07NOV12 19:02:05

****
HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SKELTON CREEK

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1.000	.00	.00	.00	254.50	2318.00	267.30	.00	267.36	2.35	2.48	2098.75	1513.08
	1.000	.00	.00	.00	254.50	2318.00	280.00	.00	280.00	.03	.52	9168.86	12580.62
	2.000	24.00	.00	.00	254.24	2318.00	267.32	.00	267.36	1.66	2.15	2389.10	1797.15
	2.000	24.00	.00	.00	254.24	2318.00	280.00	.00	280.00	.03	.51	9406.67	13185.48
	3.000	22.00	.00	.00	254.00	2318.00	267.31	.00	267.37	3.09	2.21	1461.84	1318.84
	3.000	22.00	.00	.00	254.00	2318.00	280.00	.00	280.00	.03	.46	8429.65	13290.01
	4.000	255.00	.00	.00	251.97	2318.00	267.37	.00	267.47	3.71	2.63	950.01	1203.73
	4.000	255.00	.00	.00	251.97	2318.00	280.00	.00	280.00	.05	.57	7544.83	10334.86
	5.000	253.00	.00	.00	253.11	2318.00	267.48	.00	267.55	2.55	2.13	1105.64	1451.72
	5.000	253.00	.00	.00	253.11	2318.00	280.00	.00	280.00	.04	.49	7981.91	12037.89
	6.000	516.00	.00	.00	253.31	2318.00	267.62	.00	267.65	1.36	1.46	1588.13	1986.14
	6.000	516.00	.00	.00	253.31	2318.00	280.00	.00	280.01	.02	.35	10083.03	16727.80
	7.000	328.00	.00	.00	254.84	2318.00	267.66	.00	267.72	2.65	2.00	1156.45	1423.69
	7.000	328.00	.00	.00	254.84	2318.00	280.00	.00	280.01	.03	.46	8058.90	12719.92
	8.000	552.00	.00	.00	255.63	2318.00	267.82	.00	267.89	3.54	2.05	1133.47	1232.80
	8.000	552.00	.00	.00	255.63	2318.00	280.01	.00	280.01	.04	.44	7166.74	12385.94
*	8.100	68.00	.00	.00	255.82	2318.00	267.90	.00	267.92	.88	1.84	2568.47	2466.00
	8.100	68.00	.00	.00	255.82	2318.00	280.01	.00	280.01	.03	.53	9341.29	13515.28
	8.200	91.00	267.70	.00	256.07	2318.00	268.75	.00	268.77	.69	1.68	3150.66	2781.35
	8.200	91.00	267.70	.00	256.07	2318.00	280.01	.00	280.01	.03	.55	9204.09	13065.36
*	9.000	293.00	.00	.00	256.92	2318.00	268.79	.00	268.80	3.02	1.33	2349.13	1334.71
	9.000	293.00	.00	.00	256.92	2318.00	280.01	.00	280.02	.04	.27	9043.91	11085.91

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
10.000	412.00	.00	.00	258.05	2318.00	268.88	.00	268.91	3.56	2.62	2300.04	1228.94
10.000	412.00	.00	.00	258.05	2318.00	280.02	.00	280.02	.05	.53	9005.71	10400.62
11.000	29.00	.00	.00	258.13	2318.00	268.89	.00	268.92	4.67	2.93	2082.49	1072.74
11.000	29.00	.00	.00	258.13	2318.00	280.02	.00	280.02	.06	.55	8649.64	9857.52

SKELTON CREEK

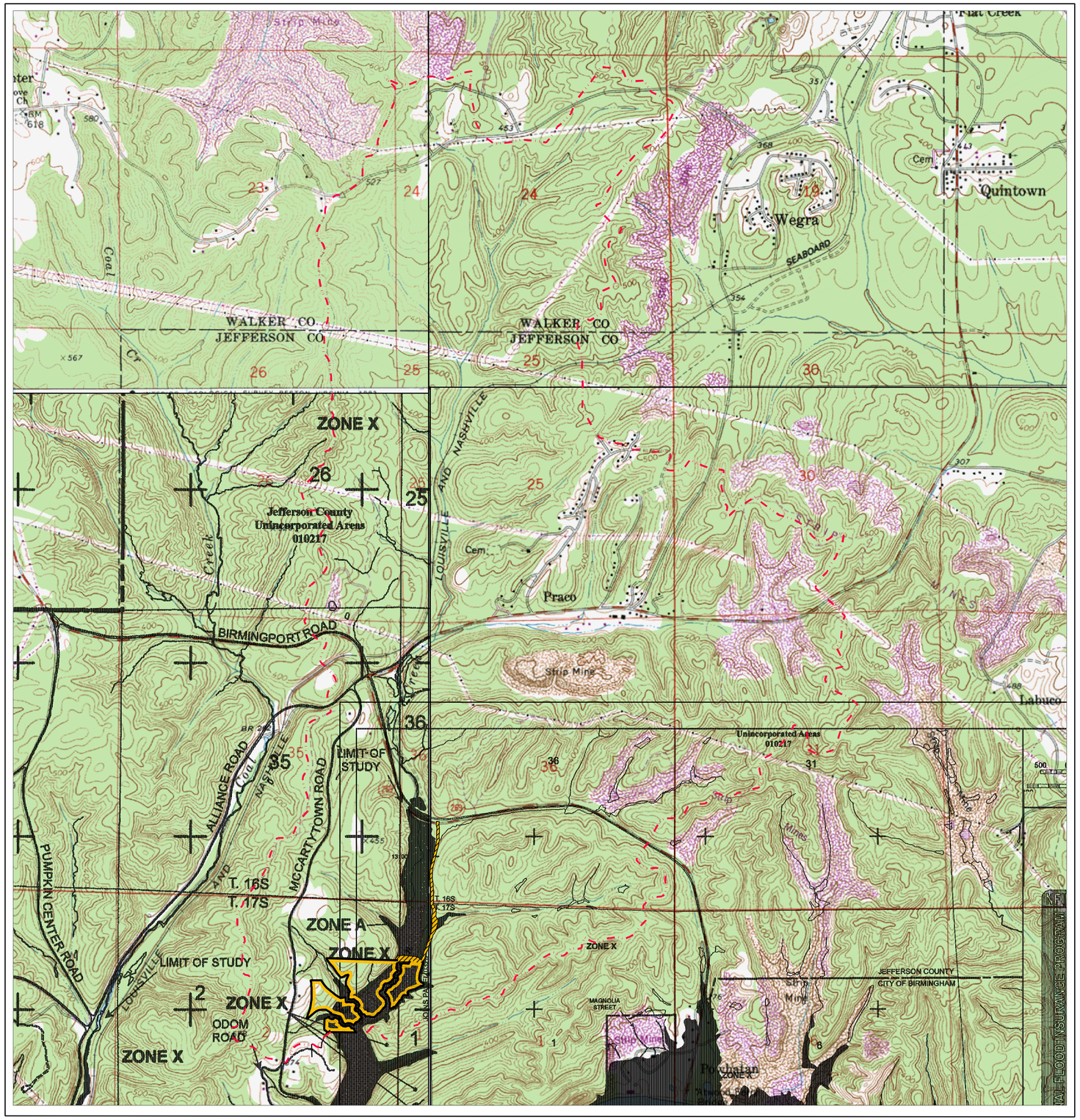
SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1.000	2318.00	267.30	.00	.00	.00	522.32	.00
	1.000	2318.00	280.00	12.70	.00	.00	587.71	.00
	2.000	2318.00	267.32	.00	.02	.00	515.20	24.00
	2.000	2318.00	280.00	12.68	.00	.00	584.37	24.00
	3.000	2318.00	267.31	.00	-.02	.00	506.45	22.00
	3.000	2318.00	280.00	12.69	.00	.00	581.11	22.00
	4.000	2318.00	267.37	.00	.06	.00	129.69	255.00
	4.000	2318.00	280.00	12.63	.00	.00	683.30	255.00
	5.000	2318.00	267.48	.00	.11	.00	159.24	253.00
	5.000	2318.00	280.00	12.52	.00	.00	669.97	253.00
	6.000	2318.00	267.62	.00	.13	.00	249.47	516.00
	6.000	2318.00	280.00	12.39	.00	.00	818.45	516.00
	7.000	2318.00	267.66	.00	.04	.00	184.83	328.00
	7.000	2318.00	280.00	12.35	.00	.00	679.48	328.00
	8.000	2318.00	267.82	.00	.17	.00	219.98	552.00
	8.000	2318.00	280.01	12.18	.00	.00	579.22	552.00
*	8.100	2318.00	267.90	.00	.08	.00	518.74	68.00
	8.100	2318.00	280.01	12.11	.00	.00	592.85	68.00
	8.200	2318.00	268.75	.00	.85	.00	486.44	91.00
	8.200	2318.00	280.01	11.26	.00	.00	570.90	91.00
*	9.000	2318.00	268.79	.00	.04	.00	566.50	293.00
	9.000	2318.00	280.01	11.23	.00	.00	619.28	293.00
	10.000	2318.00	268.88	.00	.10	.00	573.78	412.00
	10.000	2318.00	280.02	11.13	.00	.00	626.72	412.00
	11.000	2318.00	268.89	.00	.00	.00	557.25	29.00
	11.000	2318.00	280.02	11.13	.00	.00	622.45	29.00

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 8.100 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 9.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE



PERMIT AREA

Scale: 1"= 1000'
Contour Interval = 20'

Base map—Goodsprings, Dora, Gilmore & Sylvan Springs. United States Geological Survey Quadrangle Map.

MAP LEGEND

- PERMIT BOUNDARY
- WATER SHED BOUNDARY
- INTERMITTENT STREAM
- PERENNIAL STREAM
- FIRM 100 YEAR FLOOD ZONE A
- UNOCCUPIED DWELLING (BARN, SHED, ETC.)
- OCCUPIED DWELLING
- PROPOSED PRIMARY ROAD

NOTES

1) THE EAST FLOOD MAP IS PANEL 0330G, MAP NUMBER 01073C0330G.
2) THE WEST FLOOD MAP IS PANEL 0325G, MAP NUMBER 01073C0325G.

PIERCE ENGINEERING CO., INC.
1606 Hwy. 78 West Jasper, AL 35501/P.O. Box 1712-35502
(205) 384-5553 Office (205) 384-9491 Fax

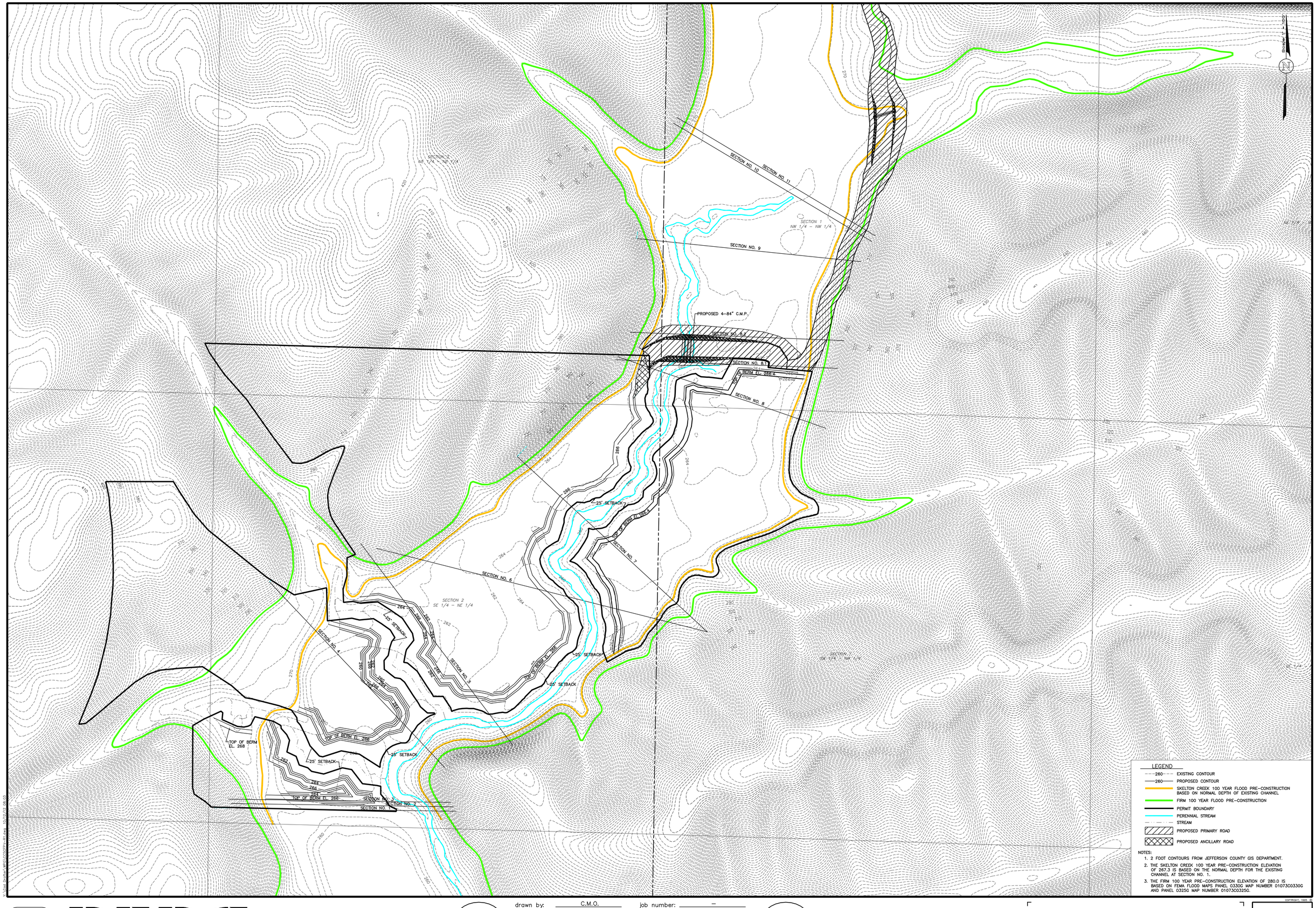
REVISIONS

NO.	DATE	NATURE OF REVISION
1		
2		
3		
4		
5		
6		

Initial Map Date: April 1, 2010

CCSCFSWSM-R1.DWG

SKELTON CREEK FLOOD STUDY
WATERSHED MAP / P-3934 R-1
CCLAY, INC.
SKELTON CREEK OPERATION

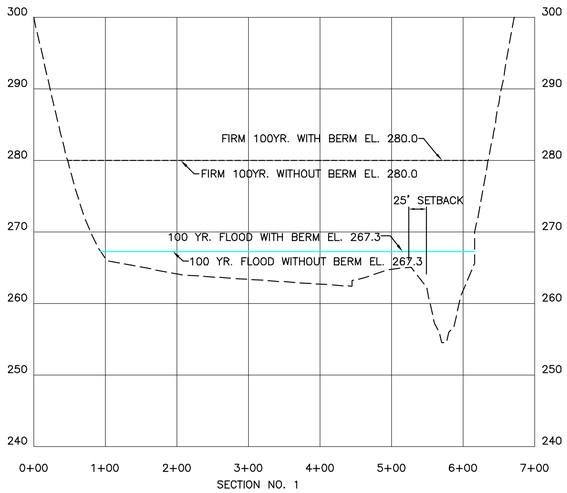


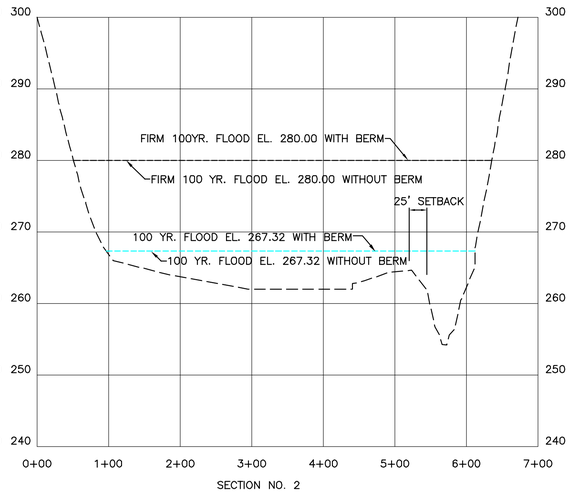
PERC
ENGINEERING CO., INC.
1606 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384–5553 Office (205) 384–9491 Fax

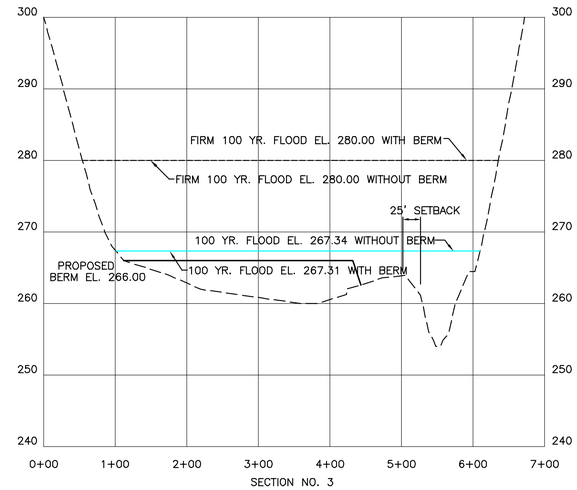
drawn by:	C.M.O.	job number:	–
checked by:	W.P.G.	initial date:	7–17–12
scale:	1"=100'	f.b./page:	–
diskette no:	–	dwg name:	CCSCFPV–R1
rev no./date:	–	rev no./date:	–

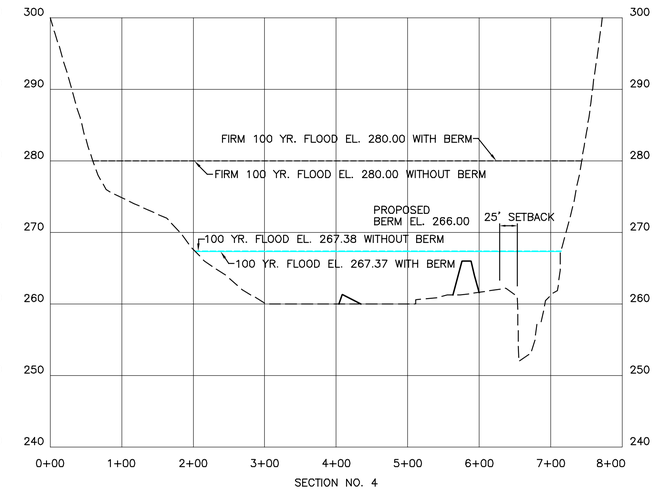
SKELTON CREEK FLOOD STUDY
PLANVIEW
CCLAY, INC.
P-3934 / R-1
SKELTON CREEK OPERATION

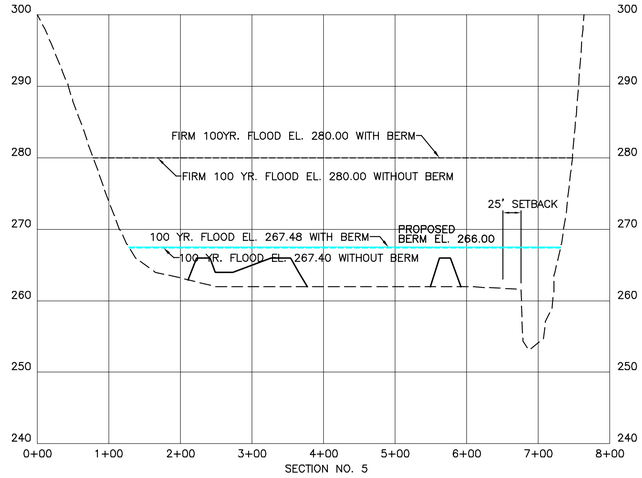
COPYRIGHT, 1995

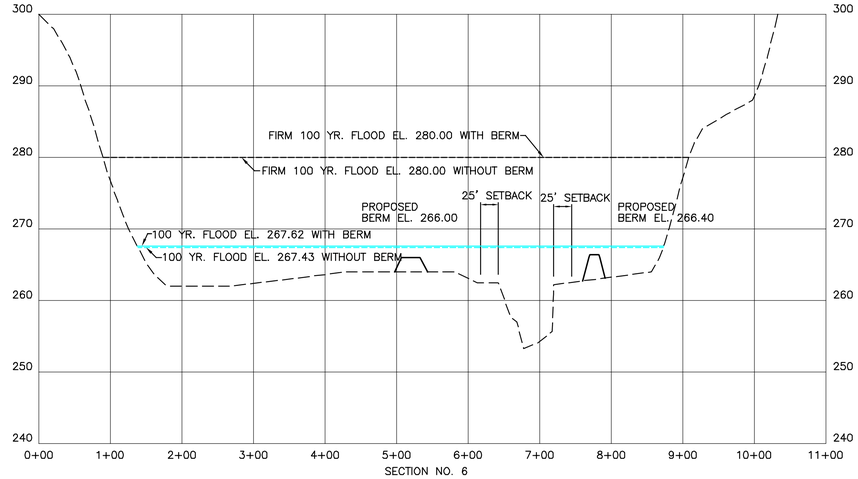


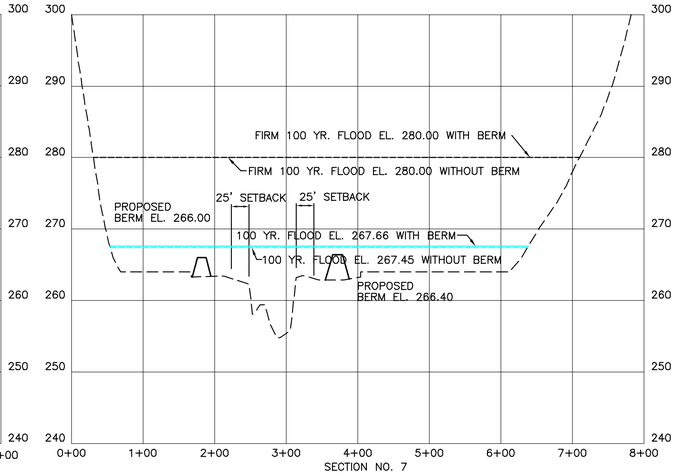












— — — — EXISTING GRADE

———— PROPOSED BERM

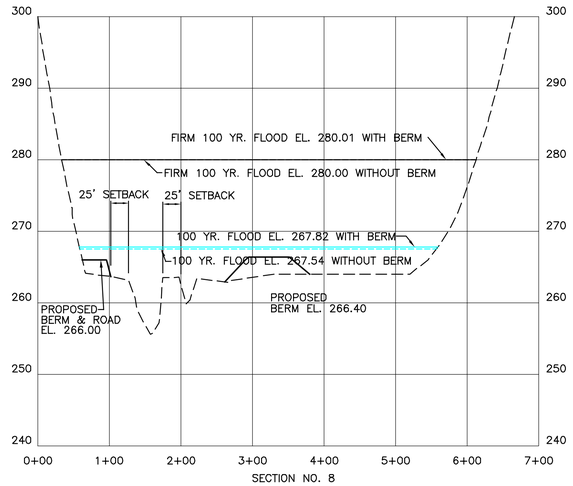
SCALE: 1"=10' VERT.
1"=100' HORIZ.

X:\Cad Drafter\WRG\CCSCFSCS1-R1.dwg 10/12/12 07:52

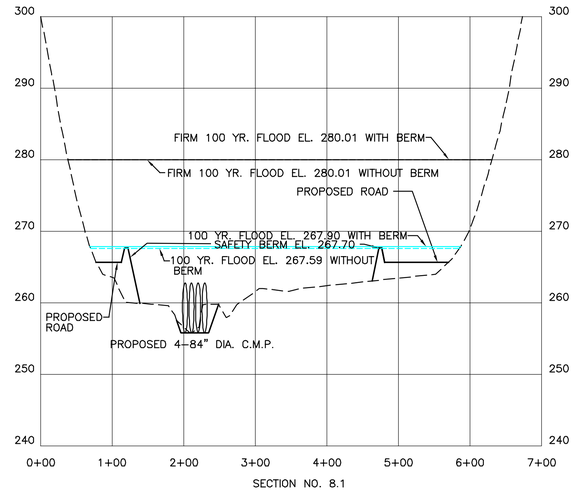
PERC
ENGINEERING CO., INC.
1606 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-5553 Office (205) 384-9491 Fax

drawn by:	C.M.O.	job number:	–
checked by:	W.P.G.	initial date:	7-17-12
scale:	AS NOTED	f.b./page:	–
diskette no:	–	dwg name:	CCSCFSCS1-R1
rev no./date:	–	rev no./date:	–

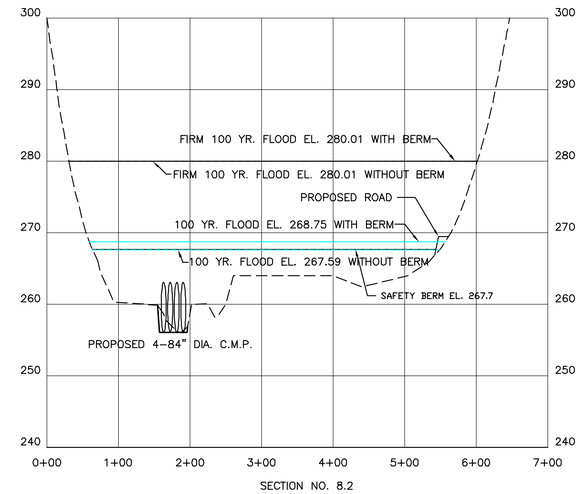
SKELTON CREEK FLOOD STUDY
CROSS SECTIONS NO. 1 TO NO. 7
CCLAY, INC.
P-3934 / R-1
SKELTON CREEK OPERATION



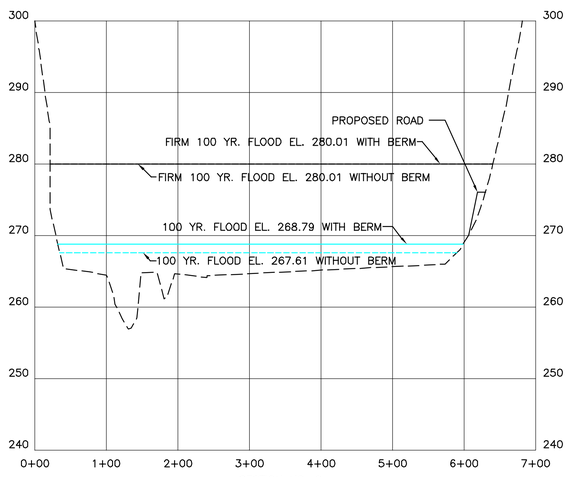
SECTION NO. 8



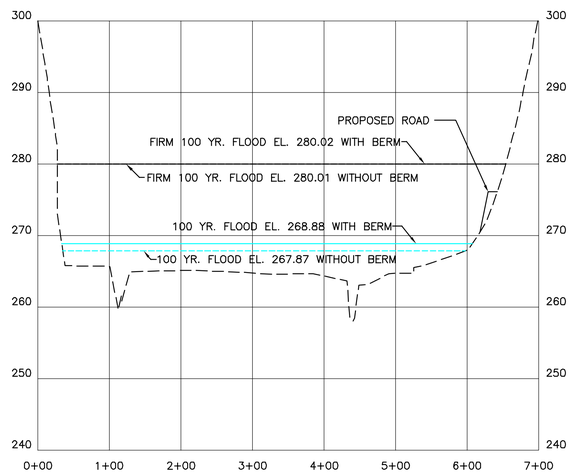
SECTION NO. 8.1



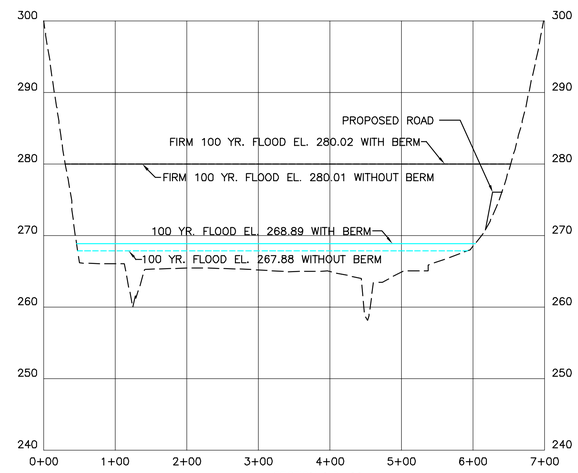
SECTION NO. 8.2



SECTION NO. 9



SECTION NO. 10



SECTION NO. 11

— — — — EXISTING GRADE

———— PROPOSED BERM

SCALE: 1"=10' VERT.
1"=100' HORIZ.

Y:\Cad Drafter\WPG\CCSCFSCS2-R1.dwg 10/12/12 08:01

PERC
ENGINEERING CO., INC.
1606 Highway 78 West Jasper, Alabama 35501
P.O. Box 1712 Jasper, Alabama 35502
(205) 384-5553 Office (205) 384-9491 Fax

drawn by:	C.M.O.	job number:	–
checked by:	W.P.G.	initial date:	7-17-12
scale:	AS NOTED	f.b./page:	–
diskette no:	–	dwg name:	CCSCFSCS2-R1
rev no./date:	–	rev no./date:	–

SKELTON CREEK FLOOD STUDY
CROSS SECTIONS NO. 8 TO NO. 11
CCLAY, INC.
P-3934 / R-1
SKELTON CREEK OPERATION